ESSAYS

ON

THE POWERS

OF

THE HUMAN MIND.

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IN THREE VOLUMES.

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ESSAYS

ON

THE INTELLECTUAL POWERS

OF

MAN.

Who hath put wiſdom in the inward parts? JOB.

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PREFACE

HUMAN knowledge may be reduced to two general heads, according as it relates to body or to mind; to things material, or to things intellectual.

The whole system of bodies in the universe, of which we know but a very small part, may be called the Material World; the whole system of minds, from the infinite Creator, to the meanest creature endowed with thought, may be called the Intellectual World. These are the two great kingdoms of nature that fall within our notice; and about the one, or the other, or things pertaining to them, every art, every science, and every human thought is employed; nor can the boldest flight of imagination carry us beyond their limits.

Many things there are, indeed, regarding the nature and the structure both of body and of mind, which our faculties cannot reach; many difficulties which the ablest philosopher cannot resolve; but of other natures, if any other there be, we have no knowledge, no conception at all.

That every thing that exists must be either corporeal or incorporeal, is evident. But it is not so evident, that every thing that exists must either be corporeal, or endowed with thought. Whether there be in the universe, beings, which are neither extended, solid, and inert, like body, nor active and intelligent, like mind, seems to be beyond the reach of our knowledge. There appears to be a vast interval between body and mind, and whether there be any intermediate nature that connects them together, we know not.

We have no reason to ascribe intelligence. or even sensation, to plants; yet there appears in them an active force and energy, which cannot be the result of any arrangement or combination of inert matter. The same thing may be said of those powers by which animals are nourished and grow, by which matter gravitates, by which magnetical and electrical bodies attract and repel each other, and by which the parts of solid bodies cohere.

Some have conjectured, that the phænomena of the material world which require active force, are produced by the continual operation of intelligent beings: Others have conjectured, that there may be in the Universe, beings that are active without intelligence, which, as a kind of incorporeal machinery, contrived by the Supreme Wisdom, perform their destined task without any knowledge or intention. But, laying aside conjecture, and all pretences to determine in things beyond our reach, we must rest in this, that body and mind are the only kinds of being of which we can have any knowledge or can form any conception. If there be other kinds, they are not discoverable by the faculties which God hath given us; and, with regard to us, are as if they were not.

As, therefore, all our knowledge is confined to body and mind, or things belonging to them, there are two great branches of philosophy, one relating to body, the other to mind. The properties of body, and the laws that obtain in the material system, are the objects of natural philosophy, as that word is now used. The branch which treats of the nature and operations of minds has by some been called Pneumatology. And to the one or the other of these branches, the principles of all the sciences belong.

What variety there may be of minds or thinking beings throughout this vast universe, we cannot pretend to say. We dwell in a little corner of God's dominion, disjoined from the rest of it. The globe which we inhabit is but one of seven planets that encircle our sun. What various orders of beings may inhabit the other six, their secondaries, and the comets belonging to our system; and how many other suns may be encircled with like systems, are things altogether hid from us. Although human reason and industry have discovered with great accuracy the order and distances of the planets, and the laws of their motion, we have no means of corresponding with them. That they may be the habitation of animated beings is very probable; but of the nature, or powers of their inhabitants, we are perfectly ignorant. Every man is conscious of a thinking principle or mind in himself, and we have sufficient evidence of a like principle in other men. The actions of brute animals shew, that they have some thinking principle, though of a nature far inferior to the human mind. And every thing about us may convince us of the existence of a Supreme Mind, the Maker and Governor of the universe. These are all the minds of which reason can give us any certain knowledge.

The mind of man is the noblest work of God which reason discovers to us, and therefore, on account of its dignity, deserves our study. It must indeed be acknowledged, that although it is of all objects the nearest to us, and seems the most within our reach, it is very difficult to attend to its operations, so as to form a distinct notion of them; and on that account there is no branch of knowledge in which the ingenious and speculative have fallen into so great errors, and even absurdities. These errors and absurdities have given rise to a general prejudice against all inquiries of this nature; and because ingenious men have, for many ages, given different and contradictory accounts of the powers of the mind, it is concluded, that all speculations concerning them are chimerical and visionary.

But whatever effect this prejudice may have with superficial thinkers, the judicious will not be apt to be carried away with it. About two hundred years ago, the opinions of men in natural philosophy were as various, and as contradictory, as they are now concerning the powers of the mind. GALILEO, TORRICELLI, KEPLER, BACON, and NEWTON, had the same discouragement in their attempts to throw light upon the material system, as we have with regard to the intellectual. If they had been deterred by such prejudices, we should never have reaped the benefit of their discoveries, which do honour to human nature, and will make their names immortal. The motto which Lord BACON prefixed to some of his writings was worthy of of his genius, *Inveniam viam aut faciam.*

There is a natural order in the progress of the sciences, and good reasons may be assigned why the philosophy of body should be *elder sister* to that of mind, and of a quicker growth; but the last hath the principle of life no less than the first, and will grow up, though slowly, to maturity. The remains of ancient philosophy upon this subject, are venerable ruins, carrying the marks of genius and industry, sufficient to inflame, but not to satisfy our curiosity. In later ages, DES CARTES was the first that pointed out the road we ought to take in those dark regions. MALEBRANCHE, ARNAUD, LOCKE, BERKELEY, BUFFIER, HUTCHESON, BUTLER, HUME, PRICE, Lord KAMES, have laboured to make discoveries; nor have they laboured in vain. For, however different and contrary their conclusions are, however sceptical some of them, they have all given new light, and cleared the way to those who shall come after them.

We ought never to despair of human genius, but rather to hope, that, in time, it may produce a system of the powers and operations of the human mind, no less certain than those of optics or astronomy.

This is the more devoutly to be wished, that a distinct knowledge of the powers of the mind would undoubtedly give great light to many other branches of science. Mr HUME hath justly observed, that "all "the sciences have a relation to human nature; and, "however wide any of them may seem to run from it, "they still return back by one passage or another. "This is the centre and capitol of the sciences, which "being once masters of, we may easily extend our con"quests every where."

The faculties of our minds are the tools and engines we must use in every disquisition; and the better we understand their nature and force, the more successfully we shall be able to apply them. Mr LOCKE gives this account of the occasion of his entering upon his Essay concerning Human Understanding: "Five or six friends (says he) meeting at my "chamber, and discoursing on a subject very remote "from this, found themselves quickly at a stand, by "the difficulties that rose on every side. After we "had for a while puzzled ourselves, without coming "any nearer to a resolution of those doubts that per"plexed us, it came into my thoughts that we took a "wrong course; and that, before we set ourselves up"on inquiries of that nature, it was necessary to ex"amine our own abilities, and see what objects our "understandings were fitted or not fitted to deal with. "This I proposed to the company, who all readily as-

"sented; and thereupon it was agreed that this should "be our first inquiry." If this be commonly the cause of perplexity in those disquisitions which have least relation to the mind, it must be so much more in those that have an immediate connection with it.

The sciences may be distinguished into two classes, according as they pertain to the material or to the intellectual world. The various parts of Natural Philosophy, the mechanical Arts, Chemistry, Medicine, and Agriculture, belong to the first; but, to the last, belong Grammar, Logic, Rhetoric, Natural Theology; Morals, Jurisprudence, Law, Politics, and the fine Arts. The knowledge of the human mind is the root from which these grow, and draw their nourishment. Whether therefore we consider the dignity of this subject, or its subserviency to science in general, and to the noblest branches of science in particular, it highly deserves to be cultivated.

A very elegant writer, on the *Sublime and Beautiful*, concludes his account of the passions thus: "The "variety of the passions is great, and worthy, in every branch of that variety, of the most diligent "investigation. The more accurately we search into the human mind, the stronger traces we every "where find of His wisdom who made it. If a discourse on the use of the parts of the body may be "considered as a hymn to the Creator; the use of the "passions, which are the organs of the mind, cannot "be barren of praise to him, nor unproductive to ourselves of that noble and uncommon union of science "and admiration, which a contemplation of the works "of infinite Wisdom alone can afford to a rational "mind; whilst referring to him whatever we find of "right, or good, or fair, in ourselves, discovering his "strength and wisdom even in our own weakness and

" imperfection, honouring them where we discover " them clearly, and adoring their profundity where " we are lost in our search, we may be inquisitive " without impertinence, and elevated without pride; " we may be admitted, if I may dare to say so, into " the counsels of the Almighty, by a consideration of " his works. This elevation of the mind ought to be " the principal end of all our studies, which, if they " do not in some measure effect, they are of very little service to us."

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DEDICATION

TO

MR DUGALD STEWART,

LATELY PROFESSOR OF MATHEMATICS, NOW PROFESSOR OF MORAL PHILOSOPHY;

AND

DR JAMES GREGORY,

PROFESSOR OF THE THEORY OF PHYSIC,

IN

THE UNIVERSITY OF EDINBURGH.

My Dear Friends,

I KNOW not to whom I can address these Essays with more propriety than to You; not only on account of a friendship begun in early life on your part, though in old age on mine, and in one of you I may say hereditary; nor yet on account of that correspondence in our literary pursuits and amusements, which has always given me so great pleasure; but because, if these Essays have any merit, you have a considerable share in it, having not only encouraged me to hope that they may be useful, but favoured me with your observations on every part of them, both before they were sent to press and while they were under it.

I have availed myself of your observations, so as to correct many faults that might otherwise have escaped me; and I have a very grateful sense of your friendship, in giving this aid to one, who stood much in need of it; having no shame, but much pleasure, in being instructed by those who formerly were my pupils, as one of you was.

It would be ingratitude to a man whose memory I most highly respect, not to mention my obligations to the late Lord KAMES for the concern he was pleased to take in this work. Having seen a small part of it, he urged me to carry it on; took account of my progress from time to time; revised it more than once, as far as it was carried, before his death; and gave me his observations on it, both with respect to the matter and the expression. On some points we differed in opinion, and debated them keenly, both in conversation and by many letters, without any abatement of his affection, or of his zeal for the work's being carried on and published: For he had too much liberality of mind not to allow to others the same liberty in judging which he claimed to himself.

It is difficult to say whether that worthy man was more eminent in active life or in speculation. Very rare, surely, have been the instances where the talents for both were united in so eminent a degree.

His genius and industry, in many different branches of literature, will, by his works, be known to posterity: His private virtues, and public spirit, his assiduity, through a long and laborious life, in many honourable public offices with which he was intrusted, and his zeal to encourage and promote every thing that tended to the improvement of his country, in laws, literature, commerce, manufactures, and agriculture, are best known to his friends and cotemporaries.

The favourable opinion which He, and You my Friends, were pleased to express of this work, has been my chief encouragement to lay it before the public; and perhaps, without that encouragement, it had never seen the light: For I have always found, that, without social intercourse, even a favourite speculation languishes; and that we cannot help thinking the better of our own opinions when they are approved by those whom we esteem good judges.

You know that the substance of these Essays was delivered annually, for more than twenty years, in Lectures to a large body of the more advanced students in this University, and for several years before, in another University. Those who heard me with attention, of whom I presume there are some hundreds alive, will recognise the doctrine which they heard, some of them thirty years ago, delivered to them more diffusely, and with the repetitions and illustrations proper for such audiences.

I am afraid, indeed, that the more intelligent reader, who is conversant in such abstract subjects, may think that there are repetitions still left, which might be spared. Such, I hope, will consider, that what to one reader is a superfluous repetition, to the greater part, less conversant in such objects, may be very useful. If this apology be deemed insufficient, and be thought to be the dictate of laziness, I claim some indulgence even for that laziness, at my period of life.

You who are in the prime of life, with the vigour which it inspires, will, I hope, make more happy advances in this, or in any other branch of science to which your talents may be applied.

THO. REID.

Glasgow-College,
June 1. 1785.

Edinr. August, 1808.

THE PUBLISHERS regret, they cannot prefix to this Edition, the MEMOIR OF DR REID'S LIFE, by Professor DUGALD STEWART, being the Author's property: But it may be had separately, in one volume octavo.—*Price five shillings in boards.*

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ESSAYS

ON THE

INTELLECTUAL POWERS OF MAN.

ESSAY I.

PRELIMINARY.

CHAP. I.

Explication of Words.

THERE is no greater impediment to the advancement of knowledge than the ambiguity of words. To this chiefly it is owing that we find sects and parties in most branches of science; and disputes, which are carried on from age to age, without being brought to an issue.

Sophistry has been more effectually excluded from mathematics and natural philosophy than from other sciences. In mathematics it had no place from the beginning: mathematicians having had the wisdom to define accurately the terms they use, and to lay down, as axioms, the first principles on which their reasoning is grounded. Accordingly we find no parties among mathematicians, and hardly any disputes.

In natural philosophy, there was no less sophistry, no less dispute and uncertainty, than in other sciences, until, about a century and a half ago, this science began to be built upon the foundation of clear definitions and self-evident axioms. Since that time, the science, as if watered with the dew of heaven, hath grown apace; disputes have ceased, truth hath prevailed, and the science hath received greater increase in two centuries than in two thousand years before.

It were to be wished, that this method, which hath been so successful in those branches of science, were attempted in others: For definitions and axioms are the foundations of all science. But that definitions may not be sought, where no definition can be given, nor logical definitions be attempted, where the subject does not admit of them, it may be proper to lay down some general principles concerning definition, for the sake of those who are less conversant in this branch of logic.

When one undertakes to explain any art or science, he will have occasion to use many words that are common to all who use the same language, and some that are peculiar to that art or science. Words of the last kind are called *terms of the art*, and ought to be distinctly explained, that their meaning may be understood.

A definition is nothing else but an explication of the meaning of a word, by words whose meaning is already known. Hence it is evident, that every word cannot be defined; for the definition must consist of words; and there could be no definition, if there were not words previously understood without definition. Common words, therefore, ought to be used in their common acceptation; and, when they have different acceptations in common language, these, when it is necessary, ought to be distinguished. But they require no definition. It is sufficient to define words that are uncommon, or that are used in an uncommon meaning.

It may farther be observed, that there are many words, which, though they may need explication, cannot be logically defined. A logical definition, that is, a strict and proper definition, must express the kind of the thing defined, and the specific difference, by which the species defined, is distinguished from every other species belonging to that kind. It is natural to the mind of man to class things under various kinds, and again to subdivide every kind into its various species. A species may often be subdivided into subordinate species, and then it is considered as a kind.

From what has been said of logical definition, it is evident, that no word can be logically defined which does not denote a species; because such things only can have a specific difference; and a specific difference is essential to a logical definition. On this account there can be no logical definition of individual things, such as London or Paris: Individuals are distinguished either by proper names, or by accidental circumstances of time or place, but they have no specific difference; and therefore, though they may be known by proper names, or may be described by circumstances or relations, they cannot be defined. It is no less evident, that the most general words cannot be logically defined, because there is not a more general term, of which they are a species.

Nay, we cannot define every species of things, because it happens sometimes that we have not words to express the specific difference. Thus a scarlet colour is, no doubt, a species of colour; but how shall we express the specific difference by which scarlet is distinguished from green or blue? The difference of them is immediately perceived by the eye, but we have not words to express it. These things we are taught by logic.

Without having recourse to the principles of logic, we may easily be satisfied that words cannot be defined, which signify things perfectly simple, and void of all composition. This observation, I think, was first made by DES CARTES, and afterwards more fully illustrated by LOCKE. And however obvious it appears to be, many instances may be given of great philosophers who have perplexed and darkened the subjects they have treated, by not knowing, or not attending to it.

When men attempt to define things which cannot be defined, their definitions will always be either obscure or false. It was one of the capital defects of ARISTOTLE's philosophy, that he pretended to define the simplest things, which neither can be, nor need to be defined; such as *time* and *motion*. Among modern philosophers, I know none that has abused definition so much as WOLFIUS, the famous German philosopher, who, in a work on the human mind, called *Psychologia Empirica*, consisting of many hundred propositions, fortified by demonstrations, with a proportional accompaniment of definitions, corollaries, and scholia, has given so many definitions of things, which cannot be defined, and so many demonstrations of things self-evident, that the greatest part of the work consists of tautology, and ringing changes upon words.

There is no subject in which there is more frequent occasion to use words that cannot be logically defined, than in treating of the powers and operations of the mind. The simplest operations of our minds must all be expressed by words of this kind. No man can explain by a logical definition what it is to think, to apprehend, to believe, to will, to desire. Every man who understands the language has some notion of the meaning of these words ; and every man, who is capable of reflection, may, by attending to the operations of his own mind, which are signified by them, form a clear and distinct notion of them, but they cannot be logically defined.

Since therefore it is often impossible to define words which we must use on this subject, we must as much as possible use common words in their common acceptation, pointing out their various senses where they are ambiguous ; and when we are obliged to use words less common, we must endeavour to explain them as well as we can, without affecting to give logical definitions, when the nature of the thing does not admit of them.

The following observations on the meaning of certain words are intended to supply, as far as we can, the want of definitions, by preventing ambiguity or obscurity in the use of them.

1. By the *mind* of a man, we understand that in him which thinks, remembers, reasons, wills. The essence both of body and of mind is unknown to us. We know certain properties of the first, and certain operations of the last, and by these only we can define or describe them. We define body to be that which is extended, solid, moveable, divisible. In like manner, we define mind to be that which thinks. We are conscious that we think, and that we have a variety of thoughts of different kinds ; such as seeing, hearing, remembering, deliberating, resolving, loving, hating, and many other kinds of thought, all which we are taught by nature to attribute to one internal principle ;

and this principle of thought we call the *mind* or *soul* of a man.

2. By the *operations* of the mind, we understand every mode of thinking of which we are conscious.

It deserves our notice, that the various modes of thinking have always, and in all languages, as far as we know, been called by the name of *operations* of the mind, or by names of the same import. To body we ascribe various properties, but not operations, properly so called; it is extended, divisible, moveable, inert; it continues in any state in which it is put; every change of its state is the effect of some force impressed upon it, and is exactly proportional to the force impressed, and in the precise direction of that force. These are the general properties of matter, and these are not operations; on the contrary, they all imply its being a dead inactive thing, which moves only as it is moved, and acts only by being acted upon.

But the mind is from its very nature a living and active being. Every thing we know of it implies life and active energy; and the reason why all its modes of thinking are called its operations, is, that in all, or in most of them, it is not merely passive, as body is, but is really and properly active.

In all ages, and in all languages, ancient and modern, the various modes of thinking have been expressed by words of active signification, such as seeing, hearing, reasoning, willing, and the like. It seems therefore to be the natural judgment of mankind, that the mind is active in its various ways of thinking; and for this reason they are called its operations, and are expressed by active verbs.

It may be made a question, What regard is to be paid to this natural judgment; may it not be a vulgar error? Philosophers who think so, have, no doubt, a right to be heard. But until it is proved that the mind is not active in thinking, but merely passive, the common language with regard to its operations ought to be used, and ought not to give place to a phraseology invented by Philosophers, which implies its being merely passive.

3. The words *power* and *faculty*, which are often used in speaking of the mind, need little explication. Every operation supposes a power in the being that operates; for, to suppose any thing to operate, which has no power to operate, is manifestly absurd. But, on the other hand, there is no absurdity in supposing a being to have power to operate, when it does not operate. Thus, I may have power to walk, when I sit; or to speak, when I am silent. Every operation therefore implies power; but the power does not imply the operation.

The *faculties* of the mind, and its *powers*, are often used as synonymous expressions. But as most synonymes have some minute distinction that deserves notice, I apprehend that the word *faculty* is most properly applied to those powers of the mind which are original and natural, and which make a part of the constitution of the mind. There are other powers which are acquired by use, exercise or study, which are not called faculties, but *habits*. There must be something in the constitution of the mind necessary to our being able to acquire habits, and this is commonly called *capacity*.

4. We frequently meet with a distinction in writers upon this subject, between things *in the mind*, and things *external* to the mind. The powers, faculties, and operations of the mind, are things in the mind. Every thing is said to be in the mind, of which the mind is the *subject*. It is self-evident, that there are

some things which cannot exist without a subject to which they belong, and of which they are attributes. Thus, colour must be in something coloured; figure in something figured; thought can only be in something that thinks; wisdom and virtue cannot exist but in some being that is wise and virtuous. When therefore we speak of things in the mind, we understand by this, things of which the mind is the subject. Excepting the mind itself, and things in the mind, all other things are said to be external. It ought therefore to be remembered, that this distinction between things in the mind, and things external, is not meant to signify the place of the things we speak of, but their subject.

There is a figurative sense in which things are said to be in the mind, which it is sufficient barely to mention. We say, such a thing was not in my mind, meaning no more than that I had not the least thought of it. By a figure, we put the thing for the thought of it. In this sense, external things are in the mind as often as they are the objects of our thought.

5. *Thinking* is a very general word, which includes all the operations of our minds, and is so well understood as to need no definition.

To *perceive*, to *remember*, to be *conscious*, and to *conceive* or *imagine*, are words common to philosophers, and to the vulgar. They signify different operations of the mind, which are distinguished in all languages, and by all men that think. I shall endeavour to use them in their most common and proper acceptation, and I think they are hardly capable of strict definition. But as some philosophers, in treating of the mind, have taken the liberty to use them very improperly, so as to corrupt the English language, and to confound things, which the common understanding of mankind hath always led them to distinguish, I shall make some observations on the meaning of them, that may prevent ambiguity or confusion in the use of them.

6. *First*, We are never said to *perceive* things, of the existence of which we have not a full conviction. I may *conceive* or *imagine* a mountain of gold, or a winged horse; but no man says that he perceives such a creature of imagination. Thus *perception* is distinguished from *conception* or imagination. *Secondly*, Perception is applied only to external objects, not to those that are in the mind itself. When I am pained, I do not say that I perceive pain, but that I feel it, or that I am conscious of it. Thus *perception* is distinguished from *consciousness*. *Thirdly*, The immediate object of perception must be something present, and not what is past. We may remember what is past, but do not perceive it. I may say, I perceive such a person has had the small-pox; but this phrase is figurative, although the figure is so familiar that it is not observed. The meaning of it is, that I perceive the pits in his face, which are certain signs of his having had the small-pox. We say we perceive the thing signified, when we only perceive the sign. But when the word *perception* is used properly, and without any figure, it is never applied to things past. And thus it is distinguished from *remembrance*.

In a word, perception is most properly applied to the evidence which we have of external objects by our senses. But as this is a very clear and cogent kind of evidence, the word is often applied by analogy to the evidence of reason or of testimony, when it is clear and cogent. The perception of external objects by our senses, is an operation of the mind of a peculiar nature, and ought to have a name appropriated to it. It has so in all languages. And, in the English, I know no word more proper to express this act of the mind than perception. Seeing, hearing, smelling, tasting, and touching or feeling, are words that express the operations proper to each sense; perceiving expresses that which is common to them all.

The observations made on this word would have been unnecessary, if it had not been so much abused in philosophical writings upon the mind; for, in other writings, it has no obscurity. Although this abuse is not chargeable on Mr HUME only, yet I think he has carried it to the highest pitch. The first sentence of his Treatise of Human Nature runs thus; "All the "perceptions of the human mind resolve themselves "into two distinct heads, which I shall call impres-"sions and ideas." He adds a little after, that, under the name of impressions, he comprehends all our sensations, passions, and emotions. Here we learn, that our passions and emotions are perceptions. I believe, no English writer before him ever gave the name of a perception to any passion or emotion. When a man is angry, we must say that he has the perception of anger. When he is in love, that he has the perception of love. He speaks often of the perceptions of memory, and of the perceptions of imagination; and he might as well speak of the hearing of sight, or of the smelling of touch: For, surely, hearing is not more different from sight, or smelling from touch, than perceiving is from remembering or imagining.

7. *Consciousness* is a word used by Philosophers, to signify that immediate knowledge which we have of our present thoughts and purposes, and, in general, of all the present operations of our minds. Whence we may observe, that consciousness is only of things present. To apply consciousness to things past, which

sometimes is done in popular discourse, is to confound consciousness with memory; and all such confusion of words ought to be avoided in philosophical discourse. It is likewise to be observed, that consciousness is only of things in the mind, and not of external things. It is improper to say, I am conscious of the table which is before me. I perceive it, I see it, but do not say I am conscious of it. As that consciousness by which we have a knowledge of the operations of our own minds, is a different power from that by which we perceive external objects, and as these different powers have different names in our language, and, I believe, in all languages, a Philosopher ought carefully to preserve this distinction, and never to confound things so different in their nature.

8. *Conceiving*, *imagining*, and *apprehending*, are commonly used as synonymous in our language, and signify the same thing which the Logicians call *simple apprehension*. This is an operation of the mind different from all those we have mentioned. Whatever we perceive, whatever we remember, whatever we are conscious of, we have a full persuasion or conviction of its existence. But we may conceive or imagine what has no existence, and what we firmly believe to have no existence. What never had an existence cannot be remembered; what has no existence *at present* cannot be the object of perception or of consciousness; but what never had, nor has any existence, may be conceived. Every man knows, that it is as easy to conceive a winged horse or a centaur, as it is to conceive a horse or a man. Let it be observed therefore, that to *conceive*, to *imagine*, to *apprehend*, when taken in the proper sense, signify an act of the mind which implies no belief or judgment at all. It is an act of the mind by which nothing is affirmed or

denied, and which therefore can neither be true nor false.

But there is another and a very different meaning of those words, so common and so well authorised in language, that it cannot easily be avoided; and on that account we ought to be the more on our guard, that we be not misled by the ambiguity. Politeness and good-breeding lead men, on most occasions, to express their opinions with modesty, especially when they differ from others whom they ought to respect. Therefore, when we would express our opinion modestly, instead of saying, "This is my opinion," or, "this is my judgment," which has the air of dogmaticalness, we say, "I conceive it to be thus, I imagine "or apprehend it to be thus;" which is understood as a modest declaration of our judgment. In like manner, when any thing is said which we take to be impossible, we say, "We cannot conceive it," meaning, that we cannot believe it.

Thus we see, that the words *conceive*, *imagine*, *apprehend*, have two meanings, and are used to express two operations of the mind, which ought never to be confounded. Sometimes they express simple apprehension, which implies no judgment at all; sometimes they express judgment or opinion. This ambiguity ought to be attended to, that we may not impose upon ourselves or others in the use of them. The ambiguity is indeed remedied in a great measure by their construction. When they are used to express simple apprehension, they are followed by a noun in the *accusative case*, which signifies the object conceived. But when they are used to express opinion or judgment, they are commonly followed by a verb in the *infinitive mood*. "I conceive an Egyptian pyramid." This implies no judgment. "I conceive the Egyptian py-

" ramids to be the most ancient monuments of human " art." This implies judgment. When the words are used in the last sense, the thing conceived must be a proposition, because judgment cannot be expressed but by a proposition. When they are used in the first sense, the thing conceived may be no proposition, but a simple term only, as a pyramid, an obelisk. Yet it may be observed, that even a proposition may be simply apprehended without forming any judgment of its truth or falsehood: For it is one thing to conceive the meaning of a proposition; it is another thing to judge it to be true or false.

Although the distinction between simple apprehension, and every degree of assent or judgment, be perfectly evident to every man who reflects attentively on what passes in his own mind; although it is very necessary, in treating of the powers of the mind, to attend carefully to this distinction; yet, in the affairs of common life, it is seldom necessary to observe it accurately. On this account, we shall find, in all common languages, the words which express one of those operations frequently applied to the other. To think, to suppose, to imagine, to conceive, to apprehend, are the words we use to express simple apprehension; but they are all frequently used to express judgment. Their ambiguity seldom occasions any inconvenience in the common affairs of life, for which language is framed. But it has perplexed philosophers, in treating of the operations of the mind, and will always perplex them, if they do not attend accurately to the different meanings which are put upon those words on different occasions.

9. Most of the operations of the mind, from their very nature, must have *objects* to which they are directed, and about which they are employed. He that

perceives, must perceive something; and that which he perceives, is called the object of his perception. To perceive, without having any object of perception, is impossible. The mind that perceives, the object perceived, and the operation of perceiving that object, are distinct things, and are distinguished in the structure of all languages. In this sentence, "I see, or perceive the moon," *I* is the person or *mind;* the active verb *see* denotes the operation of that mind; and the *moon* denotes the object. What we have said of perceiving, is equally applicable to most operations of the mind. Such operations are, in all languages, expressed by active transitive verbs: And we know, that, in all languages, such verbs require a thing or person, which is the agent, and a noun following in an oblique case, which is the object. Whence it is evident, that all mankind, both those who have contrived language, and those who use it with understanding, have distinguished these three things as different; to wit, the operations of the mind, which are expressed by active verbs, the mind itself, which is the nominative to those verbs, and the object, which is, in the oblique case, governed by them.

It would have been unnecessary to explain so obvious a distinction, if some systems of philosophy had not confounded it. Mr Hume's system, in particular, confounds all distinction between the operations of the mind and their objects. When he speaks of the ideas of memory, the ideas of imagination, and the ideas of sense, it is often impossible, from the tenor of his discourse, to know whether, by those ideas, he means the operations of the mind, or the objects about which they are employed. And, indeed, according to his system, there is no distinction between the one and the other.

A philosopher is, no doubt, entitled to examine even those distinctions that are to be found in the structure of all languages; and, if he is able to shew that there is no foundation for them in the nature of the things distinguished; if he can point out some prejudice common to mankind which has led them to distinguish things that are not really different; in that case, such a distinction may be imputed to a vulgar error, which ought to be corrected in philosophy. But when, in the first setting out, he takes it for granted, without proof, that distinctions found in the structure of all languages, have no foundation in nature; this surely is too fastidious a way of treating the common sense of mankind. When we come to be instructed by philosophers, we must bring the old light of common sense along with us, and by it judge of the new light which the philosopher communicates to us. But when we are required to put out the old light altogether, that we may follow the new, we have reason to be on our guard. There may be distinctions that have a real foundation, and which may be necessary in philosophy, which are not made in common language, because not necessary in the common business of life. But, I believe, no instance will be found of a distinction made in all languages, which has not a just foundation in nature.

10. The word *idea* occurs so frequently in modern philosophical writings upon the mind, and is so ambiguous in its meaning, that it is necessary to make some observations upon it. There are chiefly two meanings of this word in modern authors, a popular and a philosophical.

First, In popular language, *idea* signifies the same thing as conception, apprehension, notion. To have an idea of any thing, is to conceive it. To have a

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distinct idea, is to conceive it distinctly. To have no idea of it, is not to conceive it all. It was before observed, that conceiving or apprehending has always been considered by all men as an act or operation of the mind, and on that account has been expressed in all languages by an active verb. When, therefore, we use the phrase of having ideas, in the popular sense, we ought to attend to this, that it signifies precisely the same thing which we commonly express by the active verbs conceiving or apprehending.

When the word *idea* is taken in this popular sense, no man can possibly doubt whether he has ideas. For he that doubts, must think, and to think, is to have ideas.

Sometimes, in popular language, a man's ideas signify his opinions. The ideas of ARISTOTLE, or of EPICURUS, signify the opinions of these philosophers. What was formerly said of the words *imagine*, *conceive*, *apprehend*, that they are sometimes used to express judgment, is no less true of the word *idea*. This signification of the word seems, indeed, more common in the French language than in English. But it is found in this sense in good English authors, and even in Mr LOCKE. Thus we see, that having *ideas*, taken in the popular sense, has precisely the same meaning with conceiving, imagining, apprehending, and has likewise the same ambiguity. It may, therefore, be doubted, whether the introduction of this word into popular discourse, to signify the operation, of conceiving or apprehending, was at all necessary. For, *first*, We have as has been shown, several words which are either originally English, or have been long naturalized, that express the same thing; why therefore should we adopt a Greek word in place of these, any more than a French or a German word? Besides, the words of our own language are less ambiguous. For the word idea has, for many ages, been used by Philosophers as a term of art; and in the different systems of Philosophers means very different things.

Secondly, According to the philosophical meaning of the word idea, it does not signify that act of the mind which we call thought or conception, but some object of thought. Ideas, according to Mr LOCKE, (whose very frequent use of this word has probably been the occasion of its being adopted into common language,) "are nothing but the immediate objects of "the mind in thinking." But of those objects of thought called *Ideas* different sects of Philosophers have given a very different account. BRUCKERUS, a learned German, wrote a whole book giving the history of ideas.

The most ancient system we have concerning ideas, is that which is explained in several dialogues of PLATO, and which many ancient, as well as modern writers, have ascribed to PLATO as the inventor. But it is certain that PLATO had his doctrine upon this subject, as well as the name *idea*, from the school of PYTHAGORAS. We have still extant a tract of TIMÆUS the Locrian, a Pythagorean Philosopher, concerning the soul of the world, in which we find the substance of PLATO's doctrine concerning ideas. They were held to be eternal, uncreated, and immutable forms or models, according to which the Deity, of an eternal matter, made every species of things that exists. Those Philosophers held, that there are three first principles of all things. *First*, An eternal matter, of which all things were made: *Secondly*, Eternal and immaterial forms or ideas, according to which they were made: And *thirdly*, An efficient cause, the Deity, who made them The mind of man, in order to its being fitted for the contemplation of these eternal ideas, must undergo a certain purification, and be weaned from sensible things. The eternal ideas are the only object of science; but the objects of sense being in a perpetual flux, there can be no real knowledge with regard to them.

The Philosophers of the Alexandrian school, commonly called *the latter Platonists*, made some change upon the system of the ancient Platonists with respect to the eternal ideas. They held them not to be a principle distinct from the Deity, but to be the conceptions of things in the divine understanding, the natures and essences of all things being perfectly known to him from eternity.

It ought to be observed, that the Pythagoreans, and the Platonists whether elder or latter, made the eternal ideas to be objects of science only, and of abstract contemplation, not the objects of sense. And in this the ancient system of eternal ideas differs from the modern one of Father MALEBRANCHE. He held in common with other modern Philosophers, that no external thing is perceived by us immediately, but only by ideas: But he thought, that the ideas, by which we perceive an external world, are the ideas of the Deity himself, in whose mind the ideas of all things, past, present, and future, must have been from eternity; for the Deity being intimately present to our minds at all times, may discover to us as much of his ideas as he sees proper, according to certain established laws of nature: And in his ideas, as in a mirror, we perceive whatever we do perceive of the external world.

Thus we have three systems, which maintain, that the ideas, which are the immediate objects of human knowledge, are eternal and immutable, and existed before the things which they represent. There are other systems, according to which, the ideas, which are the immediate objects of all our thoughts, are posterior to the things which they represent, and derived from them. We shall give some account of these; but as they have gradually sprung out of the ancient Peripatetic system, it is necessary to begin with some account of it.

ARISTOTLE taught, that all the objects of our thought enter at first by the senses; and, since the sense cannot receive external material objects themselves, it receives their species; that is, their images or forms, without the matter; as wax receives the form of the seal, without any of the matter of it. These images or forms, impressed upon the senses, are called *sensible species*, and are the objects only of the sensitive part of the mind: But, by various internal powers, they are retained, refined, and spiritualized, so as to become objects of memory and imagination, and, at last, of pure intellection. When they are objects of memory and of imagination, they get the name of *phantasms*. When, by farther refinement, and being stripped of their particularities, they become objects of science; they are called *intelligible species*: So that every immediate object, whether of sense, of memory, of imagination, or of reasoning, must be some phantasm or species in the mind itself.

The followers of ARISTOTLE, especially the schoolmen, made great additions to this theory, which the Author himself mentions very briefly, and with an appearance of reserve. They entered into large disquisitions with regard to the sensible species, what kind of things they are; how they are sent forth by the object, and enter by the organs of the senses; how they are preserved and refined by various agents, called internal senses; concerning the number and offices of which they had many controversies. But we shall not enter into a detail of these matters.

The reason of giving this brief account of the theory of the Peripatetics, with regard to the immediate objects of our thoughts, is, because the doctrine of modern philosophers concerning ideas is built upon it. Mr LOCKE, who uses this word so very frequently, tells us, that he means the same thing by it, as is commonly meant by *species* or *phantasm*. GASSENDI, from whom LOCKE borrowed more than from any other author, says the same. The words *species* and *phantasm*, are terms of art in the Peripatetic system, and the meaning of them is to be learned from it.

The theory of DEMOCRITUS and EPICURUS, on this subject, was not very unlike to that of the Peripatetics. They held, that all bodies continually send forth slender films or spectres from their surface, of such extreme subtilty, that they easily penetrate our gross bodies, or enter by the organs of sense, and stamp their image upon the mind. The sensible species of ARISTOTLE was mere forms without matter. The spectres of EPICURUS were composed of a very subtile matter.

Modern Philosophers, as well as the Peripatetics and Epicureans of old, have conceived, that external objects cannot be the immediate objects of our thought; that there must be some image of them in the mind itself, in which, as in a mirror, they are seen. And the name *idea*, in the philosophical sense of it, is given to those internal and immediate objects of our thoughts. The external thing is the remote or mediate object; but the idea, or image of that object in the mind, is the immediate object, without which we could have no perception, no remembrance, no conception of the mediate object.

When, therefore, in common language, we speak of having an idea of any thing, we mean no more by that expression but thinking of it. The vulgar allow, that this expression implies a mind that thinks; an act of that mind which we call thinking, and an object about which we think. But, besides these three, the philosopher conceives that there is a fourth, to wit, the *idea*, which is the immediate object. The idea is in the mind itself, and can have no existence but in a mind that thinks; but the remote, or mediate object may be something external, as the sun or moon; it may be something past or future; it may be something which never existed. This is the philosophical meaning of the word *idea*; and we may observe, that this meaning of that word is built upon a philosophical opinion: For if philosophers had not believed that there are such immediate objects of all our thoughts in the mind, they would never have used the word idea to express them.

I shall only add on this article, that, although I may have occasion to use the word idea in this philosophical sense in explaining the opinions of others, I shall have no occasion to use it in expressing my own, because I believe *ideas*, taken in this sense, to be a mere fiction of philosophers. And, in the popular meaning of the word, there is the less occasion to use it, because the English words, *thought*, *notion*, *apprehension*, answer the purpose as well as the Greek word *idea*; with this advantage, that they are less ambiguous. There is indeed a meaning of the word idea, which I think most agreeable to its use in ancient philosophy, and which I would willingly adopt, if use, the arbiter of language, did permit. But this will come to be explained afterwards.

11. The word *impression* is used by Mr HUME, in

speaking of the operations of the mind, almost as often as the word *idea* is by Mr LOCKE. What the latter calls ideas, the former divides into two classes; one of which he calls impressions, the other ideas. I shall make some observations upon Mr HUME's explication of *that* word, and then consider the proper meaning of it in the English language.

"We may divide, (says Mr HUME, Essays, vol 2. "page 18.) all the perceptions of the human mind "into two classes or species, which are distinguished "by their different degrees of force and vivacity. "The less lively and forcible, are commonly denominated thoughts or ideas. The other species want a "name in our language, and in most others; let us "therefore use a little freedom, and call them impressions. By the term *impressions*, then. I mean "all our more lively perceptions, when we hear, or "see, or feel, or love, or hate, or desire, or will. "Ideas are the less lively perceptions, of which we "are conscious, when we reflect on any of those sensations or movements above mentioned."

This is the explication Mr HUME hath given in his Essays of the term *impressions*, when applied to the mind; and his explication of it in his Treatise of Human Nature, is to the same purpose.

Disputes about words belong rather to grammarians than to philosophers; but philosophers ought not to escape censure when they corrupt a language, by using words in a way which the purity of the language will not admit. I find fault with Mr HUME's phraseology in the words I have quoted,

First, Because he gives the name of perceptions to every operation of the mind. Love is a perception, hatred a perception. Desire is a perception, will is a perception; and, by the same rule, a doubt, a question, command, is a perception. This is an intolerable abuse of language, which no philosopher has authority to introduce.

Secondly, When Mr HUME says, *that we may divide all the perceptions of the human mind into two classes or species, which are distinguished by their degrees of force and vivacity*, the manner of expression is loose and unphilosophical. To differ in species is one thing; to differ in degree is another. Things which differ in degree only must be of the same species. It is a maxim of common sense, admitted by all men, that *greater* and *less* do not make a change of species. The same man may differ in the degree of his force and vivacity in the morning and at night; in health and in sickness: But this is so far from making him a different species, that it does not so much as make him a different individual. To say, therefore, that two different classes, or species of perceptions, are distinguished by the degrees of their force and vivacity, is to confound a difference of *degree* with a difference of *species*, which every man of understanding knows how to distinguish.

Thirdly, We may observe, that this Author, having given the general name of perception to all the operations of the mind, and distinguished them into two classes or species, which differ only in degree of force and vivacity, tells us, that he gives the name of impressions to all our more lively perceptions; to wit, when we hear, or see, or feel, or love, or hate, or desire, or will. There is great confusion in this account of the meaning of the word *impression*. When I see, this is an *impression*. But why has not the Author told us, whether he gives the name of *impression* to the object seen, or to that act of my mind by which I see it? When I see the full moon, the full moon is one thing, my perceiving it is another thing. Which of these two things does he call an impression? We are left to guess this; nor does all that this Author writes about impressions clear this point. Every thing he says tends to darken it, and to lead us to think, that the full moon which I see, and my seeing it are not two things, but one and the same thing.

The same observation may be applied to every other instance the Author gives to illustrate the meaning of the word *impression*. "When we hear, when "we feel, when we love, when we hate, when we de-"sire, when we will." In all these acts of the mind there must be an *object*, which is heard, or felt, or loved, or hated, or desired, or willed. Thus, for instance, I love my country. This, says Mr HUME, is an *impression*. But what is the *impression?* Is it my country, or is it the affection I bear to it? I ask the philosopher this question; but I find no answer to it. And when I read all that he has *written* on this subject, I find this word *impression* sometimes used to signify an operation of the mind, sometimes the object of the operation; but, for the most part, it is a vague and indetermined word that signifies both.

I know not whether it may be considered as an apology for such abuse of words, in an author who understood the language so well, and used it with so great propriety in writing on other subjects, that Mr HUME's system, with regard to the mind, required a language of a different structure from the common; or, if expressed in plain English, would have been too shocking to the common sense of mankind. To give an instance or two of this. If a man receives a present on which he puts a high value; if he see and handle it, and put it in his pocket, this, says Mr HUME, is an *impression.* If the man only dream that he received such a present, this is an *idea.* Wherein lies the difference between this impression and this idea; between the dream and the reality? They are different classes or species, says Mr Hume: so far all men will agree with him. But he adds, that they are distinguished only by different degrees of force and vivacity. Here he insinuates a tenet of his own, in contradiction to the common sense of mankind. Common sense convinces every man, that a lively dream is no nearer to a reality than a faint one; and that if a man should dream that he had all the wealth of Crœsus, it would not put one farthing in his pocket. It is impossible to fabricate arguments against such undeniable principles, without confounding the meaning of words.

In like manner, if a man would persuade me, that the moon which I see, and my seeing it, are not two things, but one and the same thing, he will answer his purpose less by arguing this point in plain English, than by confounding the two under one name, such as that of an *impression:* For such is the power of words, that if we can be brought to the habit of calling two things that are connected *by the same name*, we are the more easily led to believe them to be one and the same thing.

Let us next consider the proper meaning of the word *impression* in English, that we may see how far it is fit to express either the operations of the mind, or their objects.

When a figure is stamped upon a body by pressure, that figure is called an *impression*, as the impression of a seal on wax, of printing-types, or of a copperplate, on paper. This seems now to be the literal sense of the word; the effect borrowing its name from the cause. But by metaphor or analogy, like most other words, its meaning is extended, so as to signify any change produced in a body by the operation of some external cause. A blow of the hand makes no impression on a stone-wall; but a battery of cannon may. The moon raises a tide in the ocean, but makes no impression on rivers and lakes.

When we speak of making an impression on the mind, the word is carried still farther from its literal meaning; use, however, which is the arbiter of language, authorises this application of it. As when we say, that admonition and reproof make little impression on those who are confirmed in bad habits. The same discourse delivered in one way, makes a strong impression on the hearers; delivered in another way, it makes no impression at all.

It may be observed, that in such examples, an impression made on the mind always implies some change of purpose or will; some new habit produced, or some ſormer habit weakened; some passion raised or allayed. When such changes are produced by persuasion, example, or any external cause, we say that such causes make an impression upon the mind. But when things are seen, or heard, or apprehended, without producing any passion or emotion, we say that they make no impression.

In the most extensive sense, an impression is a change produced in some passive subject by the operation of an external cause. If we suppose an active being to produce any change in itself by its own active power, this is never called an impression. It is the act or operation of the being itself, not an impression upon it. From this it appears, that to give the name of an impression to any effect produced in the mind, is to suppose that the mind does not act at all in the production of that effect. If seeing, hearing, *desiring, willing, be operations of the mind, they cannot be impressions. If they be impressions, they cannot be* operations of the mind. In the structure of all languages they are considered as acts or operations of the mind itself, and the names given them imply this. To call them impressions, therefore, is to trespass against the structure, not of a particular language only, but of all languages.

If the word *impression* be an improper word to signify the operations of the mind, it is at least as improper to signify their objects; for would any man be thought to speak with propriety, who should say that the sun is an impression, that the earth and the sea are impressions?

It is commonly believed, and taken for granted, that every language, if it be sufficiently copious in words, is equally fit to express all opinions, whether they be true or false. I apprehend, however, that there is an exception to this general rule, which deserves our notice. There are certain common opinions of mankind, upon which the structure and grammar of all languages are founded. While these opinions are common to all men, there will be a great similarity in all languages that are to be found on the face of the earth. Such a similarity there really is; for we find in all languages the same parts of speech, the distinction of nouns and verbs, the distinction of nouns into adjective and substantive, of verbs into active and passive. In verbs we find like tenses, moods, persons, and numbers. There are general rules of grammar, the same in all languages. This similarity of structure in all languages shews an uniformity among men in those opinions upon which the structure of language is founded.

If, for instance, we should suppose that there was a nation who believed that the things which we call attributes might exist without a subject, there would be in their language no distinction between adjectives and substantives, nor would it be a rule with them that an adjective has no meaning, unless when joined to a substantive. If there was any nation who did not distinguish between acting and being acted upon, there would in their language be no distinction between active and passive verbs, nor would it be a rule that the active verb must have an agent in the nominative case; but that, in the passive verb, the agent must be in an oblique case.

The structure of all languages is grounded upon common notions, which Mr HUME's philosophy opposes, and endeavours to overturn. This no doubt led him to warp the common language into a conformity with his principles; but we ought not to imitate him in this, until we are satisfied that his principles are built on a solid foundation.

12. Sensation is a name given by philosophers to an act of mind, which may be distinguished from all others by this, that it hath no object distinct from the act itself. Pain of every kind is an uneasy sensation. When I am pained, I cannot say, that the pain I feel is one thing, and that my feeling it is another thing. They are one and the same thing, and cannot be disjoined, even in imagination. Pain, when it is not felt, has no existence. It can be neither greater nor less in degree or duration, nor any thing else in kind, than it is felt to be. It cannot exist by itself, nor in any subject, but in a sentient being. No quality of an inanimate insentient being can have the least resemblance to it.

What we have said of pain may be applied to every other sensation. Some of them are agreeable, others uneasy, in various degrees. These being objects of desire or aversion, have some attention given to them; but many are indifferent, and so little attended to, that they have no name in any language.

Most operations of the mind, that have names in common language, are complex in their nature, and made up of various ingredients, or more simple acts; which, though conjoined in our constitution, must be disjoined by abstraction, in order to our having a distinct and scientific notion of the complex operation. In such operations, sensation for the most part makes an ingredient. Those who do not attend to the complex nature of such operations, are apt to resolve them into some one of the simple acts of which they are compounded, overlooking the others: And from this cause many disputes have been raised, and many errors have been occasioned with regard to the nature of such operations.

The perception of external objects is accompanied with some sensation corresponding to the object perceived, and such sensations have, in many cases, in all languages, the same name with the external object which they always accompany. The difficulty of disjoining by abstraction, things thus constantly conjoined in the course of nature, and things, which have one and the same name in all languages, has likewise been frequently an occasion of errors in the philosophy of the mind. To avoid such errors, nothing is of more importance than to have a distinct notion of that simple act of the mind which we call *sensation*, and which we have endeavoured to describe. By this means we shall find it more easy to distinguish it from every external object that it accompanies, and from every other act of the mind that may be conjoined with it. For this purpose it is likewise of importance, that the name of *sensation* should, in philosophical writings, be appropriated to signify this simple act of the mind, without including any thing more in its signification, or being applied to other purposes.

I shall add an observation concerning the word *feeling*. This word has two meanings. *First*, It signifies the perceptions we have of external objects, by the sense of touch. When we speak of feeling a body to be hard or soft, rough or smooth, hot or cold, to feel these things, is to perceive them by touch. They are external things, and that act of the mind by which we feel them, is easily distinguished from the objects felt: *Secondly*, The word *feeling* is used to signify the same thing as *sensation*, which we have just now explained; and, in this sense, it has no object; the feeling and the thing felt are one and the same.

Perhaps betwixt feeling, taken in this last sense, and sensation, there may be this small difference, that sensation is most commonly used to signify those feelings which we have by our external senses and bodily appetites, and all our bodily pains and pleasures. But there are *feelings* of a nobler nature accompanying our affections, our moral judgments, and our determinations in matters of taste, to which the word *sensation* is less properly applied.

I have premised these observations on the meaning of certain words that frequently occur in treating of this subject, for two reasons, *first*, That I may be the better understood when I use them; and, *secondly*, That those who would make any progress in this branch of science, may accustom themselves to attend very carefully to the meaning of words that are used in it. They may be assured of this, that the ambiguity of words, and the vague and improper applica-

ſon of them, have thrown more darkness upon this subject, than the subtilty and intricacy of things.

When we use common words, we ought to use them in the sense in which they are most commonly used by the best and pureſt writers in the language; and, when we have occasion to enlarge or restrict the meaning of a common word, or to give it more precision than it has in common language, the reader ought to have warning of this, otherwise we shall impose upon ourselves and upon him.

A very respectable writer has given us a good example of this kind, by explaining, in an Appendix to his *Elements of Criticism*, the terms he has occasion to use. In that Appendix, most of the words are explained on which I have been making observations. And the explication I have given, I think, agrees, for the most part, with his.

Other words that need explication shall be explained as they occur.

CHAP. II.

Principles taken for granted.

AS there are words common to philosophers and to the vulgar, which need no explication; so there are principles common to both, which need no proof, and which do not admit of direct proof.

One who applies to any branch of science must be come to years of understanding, and consequently must have exercised his reason, and the other powers of his mind, in various ways. He must have formed various opinions and principles, by which he conducts himself in the affairs of life. Of those principles, some are common to all men, being evident in themselves, and so necessary in the conduct of life, that a man cannot live and act according to the rules of common prudence without them.

All men that have common understanding agree in such principles, and consider a man as lunatic, or destitute of common sense, who denies, or calls them in question. Thus, if any man were found of so strange a turn as not to believe his own eyes; to put no trust in his senses, nor have the least regard to their testimony; would any man think it worth while to reason gravely with such a person, and, by argument, to convince him of his error? Surely no wise man would. For before men can reason together, they must agree in first principles; and it is impossible to reason with a man who has no principles in common with you.

There are, therefore, common principles, which are the foundation of all reasoning, and of all science. Such common principles seldom admit of direct proof, nor do they need it. Men need not to be taught them; for they are such as all men of common understanding know; or such, at least, as they give a ready assent to, as soon as they are proposed and understood.

Such principles, when we have occasion to use them in science, are called *axioms*. And, although it be not absolutely necessary, yet it may be of great use, to point out the principles or axioms on which a science is grounded.

Thus, mathematicians, before they prove any of the propositions of mathematics, lay down certain axioms, or common principles, upon which they build their reasonings. And although those axioms be truths which every man knew before; such as, That the whole is greater than a part, That equal quantities added to equal quantities, make equal sums; yet, when we see nothing assumed in the proof of mathematical propositions, but such self-evident axioms, the propositions appear more certain, and leave no room for doubt or dispute.

In all other sciences, as well as in mathematics, it will be found, that there are a few common principles, upon which all the reasonings in that science are grounded, and into which they may be resolved. If these were pointed out and considered, we should be better able to judge what stress may be laid upon the conclusions in that science. If the principles be certain, the conclusions justly drawn from them must be certain. If the principles be only probable, the conclusions can only be probable. If the principles be false, dubious, or obscure, the superstructure that is built upon them must partake of the weakness of the foundation.

Sir ISAAC NEWTON, the greatest of natural philosophers, has given an example well worthy of imitation, by laying down the common principles or axioms, on which the reasonings in natural philosophy are built. Before this was done, the reasonings of philosophers, in that science, were as vague and uncertain as they are in most others. Nothing was fixed; all was dispute and controversy: But, by this happy expedient, a solid foundation is laid in that science, and a noble superstructure is raised upon it, about which there is now no more dispute or controversy among men of knowledge, than there is about the conclusions of mathematics.

It may, however, be observed, that the first principles of natural philosophy are of a quite different nature from mathematical axioms: They have not the same kind of evidence, nor are they necessary truths, as mathematical axioms are: They are such as these: That similar effects proceed from the same or similar causes: That we ought to admit of no other causes of natural effects, but such as are true, and sufficient to account for the effects. These are principles, which, though they have not the same kind of evidence that mathematical axioms have, yet have such evidence, that every man of common understanding readily assents to them, and finds it absolutely necessary to conduct his actions and opinions by them, in the ordinary affairs of life.

Though it has not been usual, yet, I conceive it may be useful, to point out some of those things which I shall take for granted, as first principles in treating of the mind and its faculties. There is the more occasion for this; because very ingenious men, such as DES CARTES, MALEBRANCHE, ARNAULD, LOCKE, and many others, have lost much labour, by not distinguishing things which require proof, from things which, though they may admit of illustration, yet being self-evident, do not admit of proof. When men attempt to deduce such self-evident principles from others more evident, they always fall into inconclusive reasoning: And the consequence of this has been, that others, such as BERKELEY and HUME, finding the arguments brought to prove such first principles to be weak and inconclusive, have been tempted first to doubt of them, and afterwards to deny them.

It is so irksome to reason with those who deny first principles, that wise men commonly decline it. Yet it is not impossible, that what is only a vulgar prejudice may be mistaken for a first principle. Nor is it impossible, that what is really a first principle may, by the enchantment of words, have such a mist thrown about it, as to hide its evidence, and to make a man of candour doubt of it. Such cases happen more frequently perhaps in this science than in any other; but they are not altogether without remedy. There are ways by which the evidence of first principles may be made more apparent when they are brought into dispute; but they require to be handled in a way peculiar to themselves. Their evidence is not demonstrative, but intuitive. They require not proof, but to be placed in a proper point of view. This will be shown more fully in its proper place, and applied to those very principles which we now assume. In the mean time, when they are proposed as first principles, the reader is put on his guard, and warned to consider whether they have a just claim to that character.

1. *First*, then, I shall take it for granted, that I *think*, that I *remember*, that I *reason*, and, in general, that I really perform all those operations of mind of which I am conscious.

The operations of our minds are attended with *consciousness*; and this consciousness is the evidence, the only evidence which we have or can have of their existence. If a man should take it into his head to think or to say that his consciousness may deceive him, and to require proof that it cannot, I know of no proof that can be given him; he must be left to himself as a man that denies first principles, without which there can be no reasoning. Every man finds himself under a necessity of believing what consciousness testifies, and every thing that hath this testimony is to be taken as a first principle.

2. As by consciousness we know certainly the existence of our present thoughts and passions; so we know the past by *remembrance*. And when they are recent, and the remembrance of them fresh, the knowledge of them, from such distinct remembrance, is, in its certainty and evidence, next to that of consciousness.

3. But it is to be observed, that we are conscious of

many things to which we give little or no attention. We can hardly attend to several things at the same time; and our attention is commonly employed about that which is the object of our thought, and rarely about the thought itself. Thus, when a man is angry, his attention is turned to the injury done him, or the injurious person; and he gives very little attention to the passion of anger, although he is conscious of it. It is in our power, however, when we come to the years of understanding, to give attention to our own thoughts and passions, and the various operations of our minds. And when we make these the objects of our attention, either while they are present, or when they are recent and fresh in our memory, this act of the mind is called *reflection*.

We take it for granted, therefore, that, by attentive reflection, a man may have a clear and certain knowledge of the operations of his own mind; a knowledge no less clear and certain, than that which he has of an external object when it is set before his eyes.

This *reflection* is a kind of intuition; it gives a like conviction with regard to internal objects, or things in the mind, as the faculty of seeing gives with regard to objects of sight. A man must, therefore be convinced beyond possibility of doubt, of every thing with regard to the operations of his own mind, which he clearly and distinctly discerns by attentive reflection.

4. I take it for granted, that all the thoughts I am conscious of, or remember, are the thoughts of one and the same thinking principle, which I call *myself* or my *mind*. Every man has an immediate and irresistible conviction, not only of his present existence but of his continued existence and identity, as far back as he can remember. If any man should think fit to demand a proof that the thought he is successively conscious of

belong to one and the same thinking principle; if he should demand a proof that he is the same person today as he was yesterday, or a year ago, I know no proof that can be given him: He must be left to himself, either as a man that is lunatic, or as one who denies first principles, and is not to be reasoned with.

Every man of a sound mind finds himself under a necessity of believing his own identity, and continued existence. The conviction of this is immediate and irresistible; and if he should lose this conviction, it would be a certain proof of insanity, which is not to be remedied by reasoning.

5. I take it for granted, that there are some things which cannot exist by themselves, but must be in something else to which they belong, as qualities, or attributes.

Thus, motion cannot exist but in something that is moved. And to suppose that there can be motion while every thing is at rest, is a gross and palpable absurdity. In like manner, hardness and softness, sweetness and bitterness, are things which cannot exist by themselves; they are qualities of something which is hard or soft, sweet or bitter: That thing, whatever it be, of which they are qualities, is called their *subject*, and such qualities necessarily suppose a subject.

Things which may exist by themselves, and do not necessarily suppose the existence of any thing else, are called *substances*, and with relation to the qualities or attributes that belong to them, they are called the *subjects* of such qualities or attributes.

All the things which we immediately perceive by our senses, and all the things we are conscious of, are things which must be in something else as their subject. Thus by my senses, I perceive figure, colour hardness, softness, motion, resistance, and such like things. But these are qualities, and must necessarily be in something that is figured, coloured, hard or soft, that moves, or resists. It is not to these qualities, but to that which is the subject of them, that we give the name of *body*. If any man should think fit to deny that these things are qualities, or that they require any subject, I leave him to enjoy his opinion as a man who denies first principles, and is not fit to be reasoned with. If he has common understanding, he will find that he cannot converse half an hour without saying things which imply the contrary of what he professes to believe.

In like manner, the things I am conscious of, such as thought, reasoning, desire, necessarily suppose something that thinks, that reasons, that desires. We do not give the name of *mind* to thought, reason, or desire; but to that being which thinks, which reasons, and which desires.

That every act or operation, therefore, supposes an agent, that every quality supposes a subject, are things which I do not attempt to prove, but take for granted. Every man of common understanding discerns this immediately, and cannot entertain the least doubt of it. In all languages, we find certain words which, by grammarians, are called adjectives. Such words denote attributes, and every adjective, must have a substantive to which it belongs; that is, every attribute must have a subject. In all languages, we find active verbs, which denote some action or operation; and it is a fundamental rule in the grammar of all languages, that such a verb supposes a person; that is, in other words, that every action must have an agent. We take it, therefore, as a first principle, that goodness, wisdom, and virtue, can only be in some be ing that is good, wise, and virtuous; that thinking supposes a being that thinks; and that every operation we are conscious of supposes an agent that operates, which we call *mind*.

6. I take it for granted, that in most operations of the mind, there must be an *object* distinct from the operation itself. I cannot see, without seeing something. To see, without having any object of sight, is absurd. I cannot remember, without remembering something. The thing remembered is past, while the remembrance of it is present; and therefore the operation and the object of it must be distinct things. The operations of our minds are denoted, in all languages, by active transitive verbs, which, from their construction in grammar, require not only a person or agent, but likewise an object of the operation. Thus the verb *know*, denotes an operation of mind. From the general structure of language, this verb requires a person; I know, you know, or he knows: But it requires no less a noun in the accusative case, denoting the thing known; for he that knows, must know something; and to know, without having any object of knowledge, is an absurdity too gross to admit of reasoning.

7. We ought likewise to take for granted, as first principles, things wherein we find an *universal agreement*, among the learned and unlearned, in the different nations and ages of the world. A consent of ages and nations, of the learned and vulgar, ought, at least, to have great authority, unless we can show some prejudice, as universal as that consent is, which might be the cause of it. Truth is one, but error is infinite. There are many truths so obvious to the human faculties, that it may be expected that men should universally agree in them. And this is actually found to be the case with regard to many truths, against which

we find no dissent, unless perhaps that of a few sceptical philosophers, who may justly be suspected, in such cases, to differ from the rest of mankind, through pride, obstinacy, or some favourite passion. Where there is such universal consent in things not deep nor intricate, but which lie, as it were, on the surface, there is the greatest presumption, that can be, that it is the natural result of the human faculties; and it must have great authority with every sober mind that loves truth. *Major enim pars eo fere deferri solet quo a natura deducitur.* Cic. de Off. 1. 41.

Perhaps it may be thought, that it is impossible to collect the opinions of all men upon any point whatsoever, and, therefore, that this maxim can be of no use. But there are many cases wherein it is otherwise. Who can doubt, for instance, whether mankind have, in all ages, believed the existence of a material world, and that those things which they see and handle are real, and not mere illusions and apparitions? Who can doubt, whether mankind have universally believed, that every thing that begins to exist, and every change that happens in nature, must have a cause? Who can doubt, whether mankind have been universally persuaded that there is a right and a wrong in human conduct? Some things which, in certain circumstances, they ought to do, and other things which they ought not to do? The universality of these opinions, and of many such that might be named, is sufficiently evident, from the whole tenor of mens conduct, as far as our acquaintance reaches, and from the records of history, in all ages and nations, that are transmitted to us.

There are other opinions that appear to be universal, from what is common in the structure of all languages, ancient and modern, polished and barbarous. Language is the express image and picture of human thoughts; and from the picture, we may draw very certain conclusions with regard to the original. We find, in all languages, the same parts of speech, nouns substantive and adjective, verbs active and passive, varied according to the tenses of past, present, and future; we find adverbs, prepositions, and conjunctions. There are general rules of syntax, common to all languages. This uniformity in the structure of language, shows a certain degree of uniformity in those notions upon which the structure of language is grounded.

We find, in the structure of all languages, the distinction of acting and being acted upon, the distinction of action and agent, of quality and subject, and many others of the like kind; which shews, that these distinctions are founded in the universal sense of mankind. We shall have frequent occasion to argue from the sense of mankind expressed in the structure of language; and therefore it was proper here to take notice of the force of argument drawn from this topic.

8. I need hardly say, that I shall also take for granted such facts as are attested to the conviction of all sober and reasonable men, either by our senses, by memory, or by human testimony. Although some writers on this subject have disputed the authority of the senses, of memory, and of every human faculty; yet we find, that such persons, in the conduct of life, in pursuing their ends, or in avoiding dangers, pay the same regard to the authority of their senses, and other faculties, as the rest of mankind. By this they give us just ground to doubt of their candour in their professions of scepticism.

This, indeed, has always been the fate of the few that have professed scepticism, that, when they have done what they can to discredit their senses, they find themselves, after all, under a necessity of trusting to them. Mr HUME has been so candid as to acknowledge this; and it is no less true of those who have not shewn the same candour. For I never heard that any sceptic run his head against a post, or stept into a kennel, because he did not believe his eyes.

Upon the whole, I acknowledge, that we ought to be cautious, that we do not adopt opinions as first principles, which are not entitled to that character. But there is surely the least danger of men's being imposed upon in this way, when such principles openly lay claim to the character, and are thereby fairly exposed to the examination of those who may dispute their authority. We do not pretend, that those things that are laid down as first principles may not be examined, and that we ought not to have our ears open to what may be pleaded against their being admitted as such. Let us deal with them, as an upright judge does with a witness who has a fair character. He pays a regard to the testimony of such a witness, while his character is unimpeached. But if it can be shewn that he suborned, or that he is influenced by malice or partial favour, his testimony loses all its credit, and is justly rejected.

CHAP. III.

Of Hypotheses.

EVERY branch of human knowledge hath its proper principles, its proper foundation and method of reasoning; and, if we endeavour to build it upon any other foundation, it will never stand firm and stable. Thus the historian builds upon testimony, and rarely indulges conjecture. The antiquarian mixes conjecture with testimony; and the former often makes the larger ingredient. The mathematician pays not the least regard either to testimony or conjecture, but deduces every thing, by demonstrative reasoning, from his definitions and axioms. Indeed, whatever is built upon conjecture, is improperly called science; for conjecture may beget opinion, but cannot produce knowledge. Natural philosophy must be built upon the phenomena of the material system, discovered by observation and experiment.

When men first began to philosophise, that is, to carry their thoughts beyond the objects of sense, and to enquire into the causes of things, and the secret operations of nature, it was very natural for them to indulge conjecture; nor was it to be expected, that, in many ages, they should discover the proper and scientific way of proceeding in philosophical disquisitions. Accordingly we find, that the most ancient systems in every branch of philosophy were nothing but the conjectures of men famous for their wisdom, whose fame gave authority to their opinions. Thus, in early ages, wise men conjectured, that this earth is a vast plain, surrounded on all hands by a boundless ocean. That from this ocean, the sun, moon, and stars, emerge at their rising, and plunge into it again at their setting. With regard to the mind, men in their rudest state are apt to conjecture, that the principle of life in a man is his breath; because the most obvious distinction between a living and a dead man is, that the one breathes, and the other does not. To this it is owing, that, in ancient languages, the word which denotes the soul, is that which properly signifies breath or air.

As men advance in knowledge, their first conjectures appear silly and childish, and give place to others, which tally better with later observations and discoveries. Thus, one system of philosophy succeeds another, without any claim to superior merit, but this that it is a more ingenious system of conjectures, and accounts better for common appearances.

To omit many ancient systems of this kind, Des Cartes, about the middle of the last century, dissatisfied with the *materia prima*, the *substantial forms*, and the *occult qualities* of the Peripatetics, conjectured boldly, that the heavenly bodies of our system are carried round by a vortex or whirlpool of subtile matter, just as straws and chaff are carried round in a tub of water. He conjectured, that the soul is seated in a small gland in the brain, called the *pineal gland:* That there, as in her chamber of presence, she receives intelligence of every thing that affects the senses, by means of a subtile fluid contained in the nerves, called the animal spirits; and that she dispatches these animal spirits, as her messengers, to put in motion the several muscles of the body, as there is occasion. By such conjectures as these, Des Cartes could account for every phenomenon in nature, in such a plausible manner, as gave satisfaction to a great part of the learned world for more than half a century.

Such conjectures in philosophical matters have commonly got the name of *hypotheses* or *theories*. And the invention of a hypothesis, founded on some slight probabilities, which accounts for many appearances of nature, has been considered as the highest attainment of a Philosopher. If the hypothesis hangs well together, is embellished by a lively imagination, and serves to account for common appearances; it is considered by many as having all the qualities that should recommend it to our belief; and all that ought to be required in a philosophical system.

There is such proneness in men of genius to invent hypotheses, and in others to acquiesce in them as the utmost which the human faculties can attain in philosophy, that it is of the last consequence to the progress of real knowledge, that men should have a clear and distinct understanding of the nature of hypotheses in philosophy, and of the regard that is due to them.

Although some conjectures may have a considerable degree of probability, yet it is evidently in the nature of conjecture to be uncertain. In every case, the assent ought to be proportioned to the evidence; for to believe firmly, what has but a small degree of probability, is a manifest abuse of our understanding. Now, though we may, in many cases, form very probable conjectures concerning the works of men, every conjecture we can form with regard to the works of God, has as little probability as the conjectures of a child with regard to the works of a man.

The wisdom of God exceeds that of the wisest man, more than that of the wisest man exceeds the wisdom of a child. If a child were to conjecture how an army is to be formed in the day of battle; how a city is to be fortified, or a state governed; what chance has he to guess right? As little chance has the wisest man when he pretends to conjecture how the planets move in their courses, how the sea ebbs and flows, and how our minds act upon our bodies.

If a thousand of the greatest wits that ever the world produced, were, without any previous knowledge in anatomy, to sit down and contrive how, and by what internal organs the various functions of the human body are carried on; how the blood is made to circulate, and the limbs to move, they would not in a thousand years hit upon any thing like the truth.

Of all the discoveries that have been made concerning the inward structure of the human body, never one was made by conjecture. Accurate observations of anatomists have brought to light innumerable artifices of nature in the contrivance of this machine of the human body, which we cannot but admire as excellently adapted to their several purposes. But the most sagacious physiologist never dreamed of them till they were discovered. On the other hand, innumerable conjectures, formed in different ages, with regard to the structure of the body, have been confuted by observation, and none ever confirmed.

What we have said of the internal structure of the human body, may be said, with justice, of every other part of the works of GOD, wherein any real discovery has been made. Such discoveries have always been made by patient observation, by accurate experiments, or by conclusions drawn by strict reasoning from observations and experiments; and such discoveries have always tended to refute, but not to confirm, the theories and hypotheses which ingenious men had invented.

As this is a fact confirmed by the history of philosophy in all past ages, it ought to have taught men, long ago, to treat with just contempt hypotheses in every branch of philosophy, and to despair of ever advancing real knowledge in that way. The Indian philosopher, being at a loss to know how the earth was supported, invented the hypothesis of a huge elephant; and this elephant he supposed to stand upon the back of a huge tortoise. This hypothesis, however ridiculous it appears to us, might seem very reasonable to other Indians, who knew no more than the inventor of it; and the same will be the fate of all hypotheses invented by men to account for the works of God: They may have a decent and plausible appearance to those who are not more knowing than the inventor; but, when men come to be more enlightened, they will always appear ridiculous and childish.

This has been the case with regard to hypotheses that have been revered by the most enlightened part of mankind for hundreds of years; and it will always be the case to the end of the world. For until the wisdom of men bear some proportion to the wisdom of God, their attempts to find out the structure of his works by the force of their wit and genius, will be vain.

The finest productions of human art are immensely short of the meanest works of nature. The nicest artist cannot make a feather, or the leaf of a tree. Human workmanship will never bear a comparison with divine. Conjectures and hypotheses are the invention and the workmanship of men, and must bear proportion to the capacity and skill of the inventor; and therefore will always be very unlike to the works of God, which it is the business of philosophy to discover.

The world has been so long befooled by hypotheses in all parts of philosophy, that it is of the utmost consequence to every man, who would make any progress in real knowledge, to treat them with just contempt as the reveries of vain and fanciful men, whose pride makes them conceive themselves able to unfold the mysteries of nature by the force of their genius. A learned man, in an epistle to Des Cartes, has the following observation, which very much deserved the attention of that philosopher, and of all that come after him. "When men, sitting in their closet, and "consulting only their books, attempt disquisitions "into nature, they may indeed tell how they would "have made the world, if GOD had given them that "in commission; that is, they may describe chimeras, "which correspond with the imbecility of their own "minds, no less than the admirable beauty of the "universe corresponds with the infinite perfection of "its Creator; but without an understanding truly divine, "they can never form such an idea to themselves "as the Deity had in creating things."

Let us, therefore, lay down this as a fundamental principle in our enquiries into the structure of the mind, and its operations, that no regard is due to the conjectures or hypotheses of philosophers, however ancient, however generally received. Let us accustom ourselves to try every opinion by the touchstone of fact and experience. What can fairly be deduced from facts duly observed, or sufficiently attested, is genuine and pure; it is the voice of GOD, and no fiction of human imagination.

The first rule of philosophising laid down by the great NEWTON is this: *Causas rerum naturalium, non plures admitti debere, quam quæ et veræ sint, et earum phænomenis explicandis sufficiant.* "No more causes, "nor any other causes of natural effects ought to be "admitted, but such as are both true, and are sufficient "for explaining their appearances." This is a golden rule; it is the true and proper test, by which what is sound and solid in philosophy may be distinguished from what is hollow and vain.

If a philosopher, therefore, pretend to shew us the cause of any natural effect, whether relating to matter or to mind; let us first consider whether there be sufficient evidence that the cause he assigns does really exist. If there be not, reject it with disdain as a fiction which ought to have no place in genuine philosophy. If the cause assigned really exist, consider in the next place, whether the effect it is brought to explain necessarily follow from it. Unless it have these two conditions, it is good for nothing.

When Newton had shewn the admirable effects of gravitation in our planetary system, he must have felt a strong desire to know its cause. He could have invented a hypothesis for this purpose, as many had done before him. But his philosophy was of another complexion. Let us hear what he says: *Rationem harum gravitatis proprietatum ex phænomenis non potui deducere, et hypotheses non fingo. Quicquid enim ex phænomenis non deducitur, hypothesis vocanda est. Et hypotheses, seu metaphysicæ, seu physicæ, seu qualitatum occultarum, seu mechanicæ, in philosophia experimentali locum non habent.*

CHAP. IV.

Of Analogy.

IT is natural to men to judge of things less known, by some similitude they observe, or think they observe, between them and things more familiar or better known. In many cases, we have no better way of judging. And where the things compared have really a great similitude in their nature, when there is reason to think that they are subject to the same laws, there may be a considerable degree of probability in conclusions drawn from analogy.

Thus, we may observe a very great similitude between this earth which we inhabit, and the other planets, Saturn, Jupiter, Mars, Venus, and Mercury. They all revolve round the sun, as the earth although at different distances, and in different periods. They borrow all their light from the sun, as the earth does. Several of them are known to revolve round their axis like the earth, and, by that means, must have a like succession of day and night. Some of them have moons, that serve to give them light in the absence of the sun, as our moon does to us. They are all, in their motions, subject to the same law of gravitation, as the earth is. From all this similitude, it is not unreasonable to think, that those planets may, like our earth, be the habitation of various orders of living creatures. There is some probability in this conclusion from analogy.

In medicine, physicians must, for the most part, be directed in their prescriptions by analogy. The constitution of one human body is so like to that of another, that it is reasonable to think, that what is the cause of health or sickness to one, may have the same effect upon another. And this generally is found true, though not without some exceptions.

In politics, we reason, for the most part, from analogy. The constitution of human nature is so similar in different societies or commonwealths, that the causes of peace and war, of tranquillity and sedition, of riches and poverty, of improvement and degeneracy, are much the same in all.

Analogical reasoning, therefore, is not, in all cases, to be rejected. It may afford a greater or a less degree of probability, according as the things compared are more or less similar in that nature. But it ought to be observed, that, as this kind of reasoning can afford only probable evidence at best, so, unless great caution be used, we are apt to be led into error by it. For men are naturally disposed to conceive a greater similitude in things than there really is.

To give an instance of this: Anatomists, in ancient ages, seldom dissected human bodies; but very often the bodies of those quadrupeds, whose internal structure was thought to approach nearest to that of the human body. Modern anatomists have discovered many mistakes the ancients were led into, by their conceiving a greater similitude between the structure of men and of some beasts than there is in reality. By this, and many other instances that might be given, it appears, that conclusions built on analogy stand on a slippery foundation; and that we ought never to rest upon evidence of this kind, when we can have more direct evidence.

I know no author who has made a more just and a more happy use of this mode of reasoning, than Bishop BUTLER, in his Analogy of Religion, Natural and Revealed, to the Constitution and Course of Nature. In that excellent work, the author does not ground any of the truths of religion upon analogy, as their proper evidence. He only makes use of analogy to answer objections against them. When objections are made against the truths of religion, which may be made with equal strength against what we know to be true in the course of nature, such objections can have no weight.

Analogical reasoning, therefore, may be of excellent use in answering objections against truths which have other evidence. It may likewise give a greater or a less degree of probability in cases where we can find no other evidence. But all arguments, drawn from analogy, are still the weaker, the greater disparity there is between the things compared; and therefore must be weakest of all when we compare body with mind, because there are no two things in nature more unlike.

There is no subject in which men have always been so prone to form their notions by analogies of this kind, as in what relates to the mind. We form an early acquaintance with material things by means of our senses, and are bred up in a constant familiarity with them. Hence we are apt to measure all things by them; and to ascribe to things most remote from matter, the qualities that belong to material things. It is for this reason, that mankind have, in all ages, been so prone to conceive the mind itself to be some subtile kind of matter: That they have been disposed to ascribe human figure, and human organs, not only to angels, but even to the Deity. Though we are conscious of the operations of our own minds when they are exerted, and are capable of attending to them, so as to form a distinct notion of them; this is so difficult a work to men, whose attention is constantly solicited by external objects, that we give them names from things that are familiar, and which are conceived to have some similitude to them; and the notions we form of them are no less analogical than the names we give them. Almost all the words, by which we express the operations of the mind, are borrowed from material objects. To *understand*, to *conceive*, to *imagine*, to *comprehend*, to *deliberate*, to *infer*, and many others, are words of this kind; so that the very language of mankind, with regard to the operations of our minds, is analogical. Because bodies are affected only by contact and pressure, we are apt to conceive, that what is an immediate object of thought, and affects the mind, must be in contact with it, and make some impression upon it. When we imagine any thing, the very word leads us to think, that there must be some image in the mind, of the thing conceived. It is evident, that these notions are drawn from some similitude conceived between body and mind, and between the properties of body and the operations of mind.

To illustrate more fully that analogical reasoning from a supposed similitude of mind to body, which I conceive to be the most fruitful source of error with regard to the operations of our minds, I shall give an instance of it.

When a man is urged by contrary motives, those on one hand inciting him to do some action, those on the other to forbear it; he deliberates about it, and at last resolves to do it, or not to do it. The contrary motives are here compared to the weights in the opposite scales of a balance; and there is not perhaps any instance that can be named of a more striking analogy between body and mind. Hence the phrases of weighing motives, of deliberating upon actions, are common to all languages.

From this analogy, some philosophers draw very important conclusions. They say, that, as the balance cannot incline to one side more than the other, when the opposite weights are equal; so a man cannot possibly determine himself, if the motives on both hands are equal: and, as the balance must necessarily turn to that side which has most weight; so the man must necessarily be determined to that hand where the motive is strongest. And on this foundation, some of the schoolmen maintained, that, if a hungry ass were placed between two bundles of hay equally inviting, the beast must stand still and starve to death, being unable to turn to either, because there are equal motives to both. This is an instance of that analogical reasoning, which I conceive ought never to be trusted: For, the analogy between a balance and a man deliberating, though one of the strongest that can be found between matter and mind, is too weak to support any argument. A piece of dead inactive matter, and an active intelligent being, are things very unlike; and because the one would remain at rest in a certain case, it does not follow that the other would be inactive in a case somewhat similar. The argument is no better than this, that, because a dead animal moves only as it is pushed, and, if pushed with equal force in contrary directions, must remain at rest; therefore the same thing must happen to a living animal; for surely the similitude between a dead animal and a living, is as great as that between a balance and a man.

The conclusion I would draw from all that has been said on analogy, is, that, in our enquiries concerning the mind, and its operations, we ought never to trust to reasonings, drawn from some supposed similitude of body to mind; and that we ought to be very much upon our guard, that we be not imposed upon by those analogical terms and phrases, by which the operations of the mind are expressed in all languages.

CHAP. V.

Of the proper Means of knowing the Operations of the Mind.

SINCE we ought to pay no regard to hypotheses, and to be very suspicious of analogical reasoning, it may be asked, from what source must the knowledge of the mind, and its faculties be drawn?

I answer, The chief and proper source of this branch of knowledge is accurate reflection upon the operations of our own minds. Of this source we shall speak more fully, after making some remarks upon two others that may be subservient to it. The first of them is, attention to the structure of language.

The language of mankind is expressive of their thoughts, and of the various operations of their minds. The various operations of the understanding, will, and passions, which are common to mankind, have various forms of speech corresponding to them in all languages, which are the signs of them, and by which they are expressed: And a due attention to the signs may, in many cases, give considerable light to the things signified by them.

There are, in all languages, modes of speech, by which men signify their judgment, or give their testimony; by which they accept or refuse; by which they ask information or advice; by which they command, or threaten, or supplicate; by which they plight their faith in promises and contracts. If such operations were not common to mankind, we should not find in all languages forms of speech, by which they are expressed.

All languages, indeed, have their imperfections; they can never be adequate to all the varieties of human thought; and therefore things may be really distinct in their nature, and capable of being distinguished by the human mind, which are not distinguished in common language. We can only expect, in the structure of languages, those distinctions which all mankind in the common business of life have occasion to make.

There may be peculiarities in a particular language of the causes of which we are ignorant, and from which, therefore, we can draw no conclusion. But whatever we find common to all languages, must have a common cause; must be owing to some common notion or sentiment of the human mind.

We gave some examples of this before, and shall here add another. All languages have a plural number in many of their nouns; from which we may infer, that all men have notions, not of individual things only, but of attributes, or things which are common to many individuals; for no individual can have a plural number.

Another source of information in this subject, is a due attention to the course of human actions and conduct. The actions of men are effects: Their sentiments, their passions, and their affections, are the causes of those effects; and we may, in many cases, form a judgment of the cause from the effect.

The behaviour of parents towards their children, gives sufficient evidence, even to those who never had children, that the parental affection is common to mankind. It is easy to see, from the general conduct of men, what are the natural objects of their esteem, their admiration, their love, their approbation, their resentment, and of all their other original dispositions. It is obvious, from the conduct of men in all ages, that man is by his nature a social animal; that he delights to associate with his species; to converse, and to exchange good offices with them.

Not only the actions, but even the opinions of men may sometimes give light into the frame of the human mind. The opinions of men may be considered as the effects of their intellectual powers, as their actions are the effects of their active principles. Even the prejudices and errors of mankind, when they are general, must have some cause no less general; the discovery of which will throw some light upon the frame of the human understanding.

I conceive this to be the principal use of the history of philosophy. When we trace the history of the various philosophical opinions that have sprung up among thinking men, we are led into a labyrinth of fanciful opinions, contradictions, and absurdities, intermixed with some truths; yet we may sometimes find a clue to lead us through the several windings of this labyrinth: We may find that point of view which presented things to the author of the system, in the light in which they appeared to him. This will often give a consistency to things seemingly contradictory, and some degree of probability to those that appeared most fanciful.

The history of philosophy, considered as a map of the intellectual operations of men of genius, must always be entertaining, and may sometimes give us views of the human understanding, which could not easily be had any other way.

I return to what I mentioned as the main source of information on this subject; attentive reflection upon the operations of our own mind.

All the notions we have of mind, and of its operations, are, by Mr LOCKE, called *ideas of reflection*. A man may have as distinct notions of remembrance, of judgment, of will, of desire, as he has of any object whatever. Such notions, as Mr LOCKE justly observes, are got by the power of reflection. But what is this power of reflection? It is, says the same author, "that "power by which the mind turns its view inward, and "observes it own actions and operations." He observes elsewhere, "That the understanding, like the "eye, whilst it makes us see and perceive all other "things, takes no notice of itself; and that it requires "art and pains to set it at a distance, and make it its "own object." CICERO hath expressed this sentiment most beautifully. Tusc. I. 28.

This power of the understanding to make its own operations its object, to attend to them, and examine them on all sides, is the power of reflection, by which alone we can have any distinct notion of the powers of our own, or of other minds.

This reflection ought to be distinguished from consciousness, with which it is too often confounded, even by Mr LOCKE. All men are conscious of the operations of their own minds, at all times, while they are awake; but there are few who reflect upon them, or make them objects of thought.

From infancy, till we come to the years of understanding, we are employed solely about external objects. And although the mind is conscious of its operations, it does not attend to them; its attention is turned solely to the external objects, about which those operations are employed. Thus, when a man is angry, he is conscious of his passion; but his attention is turned to the person who offended him, and the circumstances of the offence, while the passion of anger is not in the least the object of his attention.

I conceive, this is sufficient to shew the difference between consciousness of the operations of our minds, and reflection upon them; and to shew that we may have the former without any degree of the latter. The difference between consciousness and reflection, is like to the difference between a superficial view of an object which presents itself to the eye, while we are engaged about something else, and that attentive examination which we give to an object when we are wholly employed in surveying it. Attention is a voluntary act; it requires an active exertion to begin and to continue it; and it may be continued as long as we will; but consciousness is involuntary and of no continuance, changing with every thought.

The power of reflection upon the operations of their own minds does not appear at all in children. Men must be come to some ripeness of understanding before they are capable of it. Of all the powers of the human mind, it seems to be the last that unfolds itself.

Most men seem incapable of acquiring it in any considerable degree. Like all our other powers, it is greatly improved by exercise; and until a man has got the habit of attending to the operations of his own mind, he can never have clear and distinct notions of them, nor form any steady judgment concerning them. His opinions must be borrowed from others, his notions confused and indistinct, and he may easily be led to swallow very gross absurdities. To acquire this habit, is a work of time and labour, even in those who begin it early, and whose natural talents are tolerably fitted for it; but the difficulty will be daily diminishing, and the advantage of it is great. They will thereby be enabled to think with precision and accuracy on every subject, especially on those subjects that are more abstract. They will be able to judge for themselves in many important points, wherein others must blindly follow a leader.

CHAP. VI.

Of the difficulty of attending to the operations of our own minds.

THE difficulty of attending to our mental operations ought to be well understood, and justly estimated, by those who would make any progress in this science; that they may neither, on the one hand, expect success without pains and application of thought, nor, on the other, be discouraged, by conceiving that the obstacles that lie in the way are insuperable, and that there is no certainty to be attained in it. I shall, therefore, endeavour to point out the causes of this difficulty, and the effects that have arisen from it, that we may be able to form a true judgment of both.

1. The number and quick succession of the opera-

tions of the mind make it difficult to give due attention to them. It is well known, that if a great number of objects be presented in quick succession, even to the eye, they are confounded in the memory and imagination. We retain a confused notion of the whole, and a more confused one of the several parts, especially if they are objects to which we have never before given particular attention. No succession can be more quick than that of thought. The mind is busy while we are awake, continually passing from one thought, and one operation, to another. The scene is constantly shifting. Every man will be sensible of this, who tries but for one minute to keep the same thought in his imagination, without addition or variation. He will find it impossible to keep the scene of his imagination fixed. Other objects will intrude without being called, and all he can do is to reject these intruders as quickly as possible, and return to his principal object.

2. In this exercise, we go contrary to habits which have been early acquired, and confirmed by long unvaried practice. From infancy, we are accustomed to attend to objects of sense, and to them only; and, when sensible objects have got such strong hold of the attention by confirmed habit, it is not easy to dispossess them. When we grow up, a variety of external objects solicits our attention, excites our curiosity, engages our affections, or touches our passions; and the constant round of employment, about external objects, draws off the mind from attending to itself; so that nothing is more just than the observation of Mr LOCKE before-mentioned, "That the understanding, like the "eye, while it surveys all the objects around it, com"monly takes no notice of itself."

3. The operations of the mind, from their very na-

ture, lead the mind to give its attention to some other object. Our sensations, as will be shewn afterwards, are natural signs, and turn our attention to the things signified by them; so much, that most of them, and those the most frequent and familiar, have no name in any language. In perception, memory, judgment, imagination, and reasoning, there is an object distinct from the operation itself; and, while we are led by a strong impulse, to attend to the object, the operation escapes our notice. Our passions, affections, and all our active powers, have, in like manner, their objects which engross our attention, and divert it from the passion itself.

4. To this we may add a just observation made by Mr Hume, That, when the mind is agitated by any passion, as soon as we turn our attention from the object to the passion itself, the passion subsides or vanishes, and by that means escapes our enquiry. This, indeed, is common to almost every operation of the mind: When it is exerted, we are conscious of it; but then we do not attend to the operation, but to its object. When the mind is drawn off from the object to attend to its own operation, that operation ceases, and escapes our notice.

5. As it is not sufficient to the discovery of mathematical truths, that a man be able to attend to mathematical figures; as it is necessary that he should have the ability to distinguish accurately things that differ, and to discern clearly the various relations of the quantities he compares; an ability which, though much greater in those who have the force of genius than in others, yet even in them requires exercise and habit to bring it to maturity: So, in order to discover the truth in what relates to the operations of the mind, it is not enough that a man be able to give attention to them:

he must have the ability to distinguish accurately their minute differences; to resolve and analyse complex operations into their simple ingredients; to unfold the ambiguity of words, which, in this science is greater than in any other, and to give them the same accuracy and precision that mathematical terms have. For, indeed, the same precision in the use of words; the same cool attention to the minute differences of things; the same talent for abstraction and analysing, which fits a man for the study of mathematics, is no less necessary in this. But there is this great difference between the two sciences, that the objects of mathematics being things external to the mind, it is much more easy to attend to them, and fix them steadily in the imagination.

The difficulty attending our enquiries into the powers or the mind, serves to account for some events respecting this branch of philosophy, which deserve to be mentioned.

While most branches of science have, either in ancient or in modern times, been highly cultivated, and brought to a considerable degree of perfection, this remains, to this day, in a very low state, and, as it were, in its infancy.

Every science invented by men must have its beginning and its progress; and, from various causes, it may happen that one science shall be brought to a great degree of maturity, while another is yet in its infancy. The maturity of a science may be judged of by this: When it contains a system of principles, and conclusions drawn from them, which are so firmly established, that, among thinking and intelligent men, there remains no doubt or dispute about them; so that those who come after may raise the superstructure higher, but shall never be able to overturn what is already built, in order to begin on a new foundation.

Geometry seems to have been in its infancy about the time of THALES and PYTHAGORAS; because many of the elementary propositions, on which the whole science is built, are ascribed to them as the inventors. EUCLID's Elements, which were written some ages after PYTHAGORAS, exhibit a system of geometry which deserves the name of a science; and though great additions have been made by APPOLONIUS, ARCHIMEDES, PAPPUS, and others among the ancients, and still greater by the moderns; yet what was laid down in EUCLID's Elements was never set aside. It remains as the firm foundation of all future superstructures in that science.

Natural philosophy remained in its infant state near two thousand years after geometry had attained to its manly form: For natural philosophy seems not to have been built on a stable foundation, nor carried to any degree of maturity, till the last century. The system of DES CARTES, which was all hypothesis, prevailed in the most enlightened part of Europe till towards the end of last century. Sir ISAAC NEWTON has the merit of giving the form of a science to this branch of philosophy; and it need not appear surprising, if the philosophy of the human mind should be a century or two later in being brought to maturity.

It has received great accessions from the labours of several modern authors; and perhaps wants little more to entitle it to the name of a science, but to be purged of certain hypotheses, which have imposed on some of the most acute writers on this subject, and led them into downright scepticism.

What the ancients have delivered to us concerning the mind, and its operations, is almost entirely drawn not from accurate reflection, but from some conceived analogy between body and mind. And although the modern authors I formerly named have given more attention to the operations of their own minds, and by that means have made important discoveries; yet, by retaining some of the ancient analogical notions, their discoveries have been less useful than they might have been, and have led to scepticism.

It may happen in science, as in building, that an error in the foundation shall weaken the whole; and the farther the building is carried on, this weakness shall become the more apparent and the more threatening. Something of this kind seems to have happened in our systems concerning the mind. The accession they have received by modern discoveries, though very important in itself, has thrown darkness and obscurity upon the whole, and has led men rather to scepticism than to knowledge. This must be owing to some fundamental errors that have not been observed; and when these are corrected, it is to be hoped, that the improvements that have been made will have their due effect.

The last effect I observe of the difficulty of enquiries into the powers of the mind, is, that there is no other part of human knowledge, in which ingenious authors have been so apt to run into strange paradoxes, and even into gross absurdities.

When we find philosophers maintaining, that there is no heat in the fire, nor colour in the rainbow: When we find the gravest philosophers, from DES CARTES down to Bishop BERKELEY, mustering up arguments to prove the existence of a material world, and unable to find any that will bear examination: When we find Bishop BERKELEY and Mr HUME, the acutest metaphysicians of the age, maintaining that there is no such thing as matter in the universe: That sun, moon, and stars, the earth which we inhabit, our own bodies, and those of our friends, are only ideas in our minds, and have no existence but in thought: When we find the last maintaining, that there is neither body nor mind; nothing in nature but ideas and impressions, without any substance on which they are impressed: That there is no certainty, nor indeed probability, even in mathematical axioms: I say, when we consider such extravagancies of many of the most acute writers on this subject, we may be apt to think the whole to be only a dream of fanciful men, who have entangled themselves in cobwebs spun out of their own brain. But we ought to consider, that the more closely and ingeniously men reason from false principles, the more absurdities they will be led into; and when such absurdities help to bring to light the false principles from which they are drawn, they may be the more easily forgiven.

CHAP. VII.

Division of the Powers of the Mind.

THE powers of the mind are so many, so various, and so connected and complicated in most of its operations, that there never has been any division of them proposed which is not liable to considerable objections. We shall therefore take that general division which is the most common, into the powers of *understanding* and those of *will*. Under the will we comprehend our active powers, and all that lead to action, or influence the mind to act; such as appetites, passions, affections. The understanding comprehends our contemplative powers; by which we perceive objects; by which we conceive or remember them; by which we analyse or compound them; and by which we judge and reason concerning them.

Although this general division may be of use in order to our proceeding more methodically in our subject, we are not to understand it as if, in those operations which are ascribed to the understanding, there were no exertion of will or activity, or as if the understanding were not employed in the operations ascribed to the will; for I conceive there is no operation of the understanding wherein the mind is not active in some degree. We have some command over our thoughts, and can attend to this or to that, of many objects which present themselves to our senses, to our memory, or to our imagination. We can survey an object on this side or that, superficially or accurately, for a longer or a shorter time; so that our contemplative powers are under the guidance and direction of the active; and the former never pursue their object, without being led and directed, urged or restrained by the latter: And because the understanding is always more or less directed by the will, mankind have ascribed some degree of activity to the mind in its intellectual operations, as well as in those which belong to the will, and have expressed them by active verbs, such as seeing, hearing, judging, reasoning, and the like.

And as the mind exerts some degree of activity even in the operations of understanding, so it is certain, that there can be no act of will which is not accompanied with some act of understanding. The will must have an object, and that object must be apprehended or conceived in the understanding. It is therefore to be remembered, that in most, if not all operations of the mind, both faculties concur; and we range the operation under that faculty which hath the largest share in it.

The intellectual powers are commonly divided into simple apprehension, judgment, and reasoning. As this division has in its favour the authority of antiquity, and of a very general reception, it would be improper to set it aside without giving any reason; I shall therefore explain it briefly, and give the reasons why I chuse to follow another.

It may be observed, that, without apprehension of the objects concerning which we judge, there can be no judgment; as little can there be reasoning without both apprehension and judgment: These three operations, therefore, are not independent of each other. The second includes the first, and the third includes both the first and second; but the first may be exercised without either of the other two. It is on that account called *simple apprehension*; that is, apprehension unaccompanied with any judgment about the object apprehended. This simple apprehension of an object is, in common language, called *having a notion*, or *having a conception* of the object, and by late authors is called *having an idea of it.* In speaking, it is expressed by a word, or by a part of a proposition, without that composition and structure which makes a complete sentence; as *a man*, *a man of fortune.* Such words, taken by themselves, signify simple apprehensions. They neither affirm nor deny; they imply no judgment or opinion of the thing signified by them, and therefore cannot be said to be either true or false.

The second operation in this division is *judgment*; in which, say the philosophers, there must be two objects of thought compared, and some agreement or disagreement, or, in general, some relation discerned between them; in consequence of which, there is an opinion or belief of that relation which we discern. This operation is expressed in speech by a proposition, in which some relation between things compared is affirmed or denied: As when we say, *All men are fallible.*

Truth and falsehood are qualities which belong to judgment only; or to propositions by which judgment is expressed. Every judgment, every opinion, and every proposition, is either true or false. But words which neither affirm nor deny any thing, can have neither of those qualities; and the same may be said of simple apprehensions, which are signified by such words.

The third operation is *reasoning;* in which, from two or more judgments, we draw a conclusion.

This division of our intellectual powers corresponds perfectly with the account commonly given by philosophers, of the successive steps by which the mind proceeds in the acquisition of its knowledge; which are these three: *First*, by the senses, or by other means, it is furnished with various simple apprehensions, notions or ideas. These are the materials which nature gives it to work upon; and from the simple ideas it is furnished with by nature, it forms various others more complex. *Secondly*, by comparing its ideas, and by perceiving their agreements and disagreements, it forms its judgments. And, *lastly*, from two or more judgments, it deduces conclusions of reasoning.

Now, if all our knowledge is got by a procedure of this kind, certainly the threefold division of the powers of understanding, into simple apprehension, judgment, and reasoning, is the most natural, and the most proper that can be devised. This theory and that division are so closely connected, that it is difficult to judge which of them has given rise to the other; and they must stand or fall together. But if all our knowledge is not got by a process of this kind; if there are other avenues of knowledge besides the comparing our ideas, and perceiving their agreements and disagreements, it is probable that there may be operations of the understanding which cannot be properly reduced under any of the three that have been explained.

Let us consider some of the most familiar operations of our minds, and see to which of the three they belong. I begin with consciousness. I know that I think, and this of all knowledge is the most certain. Is that operation of my mind, which gives me this certain knowledge, to be called simple apprehension? No, surely. Simple apprehension neither affirms nor denies. It will not be said that it is by reasoning that I know that I think. It remains, therefore, that it must be by judgment, that is, according to the account given of judgment, by comparing two ideas, and perceiving the agreement between them. But what are the ideas compared? They must be the idea of myself, and the idea of thought, for they are the terms of the proposition *I think*. According to this account then, first, I have the idea of myself, and the idea of thought; then, by comparing these two ideas, I perceive that I think.

Let any man who is capable of reflection judge for himself, whether it is by an operation of this kind that he comes to be convinced that he thinks? To me it appears evident, that the conviction I have that I think, is not got in this way; and therefore I conclude, either that consciousness is not judgment, or that judgment is not rightly defined to be the per-

ception of some agreement or disagreement between two ideas.

The perception of an object by my senses is another operation of the understanding. I would know whether it be simple apprehension, or judgment, or reasoning. It is not simple apprehension, because I am persuaded of the existence of the object as much as I could be by demonstration. It is not judgment, if by judgment be meant the comparing ideas, and perceiving their agreements or disagreements. It is not reasoning, because those who cannot reason can perceive.

I find the same difficulty in classing memory under any of the operations mentioned.

There is not a more fruitful source of error in this branch of philosophy, than divisions of things which are taken to be complete when they are not really so. To make a perfect division of any class of things, a man ought to have the whole under his view at once. But the greatest capacity very often is not sufficient for this. Some thing is left out which did not come under the philosopher's view when he made his division: And to suit this to the division, it must be made what nature never made it. This has been so common a fault of philosophers, that one who would avoid error ought to be suspicious of divisions, though long received, and of great authority, especially when they are grounded on a theory that may be called in question. In a subject imperfectly known, we ought not to pretend to perfect divisions, but to leave room for such additions or alterations as a more perfect view of the subject may afterwards suggest.

I shall not, therefore, attempt a complete enumeration of the powers of the human understanding. I *shall only mention those which I propose, to explain, and they are the following:*

1st, The powers we have by means of our external senses. *2dly*, Memory. *3dly*, Conception. *4thly*, The powers of resolving and analysing complex objects, and compounding those that are more simple. *5thly*, Judging. *6thly*, Reasoning. *7thly*, Taste. *8thly*. Moral Perception. And, *last* of all, Consciousness.

CHAP. VIII.

Of Social Operations of Mind.

THERE is another division of the powers of the mind, which, though it has been, ought not to be overlooked by writers on this subject, because it has a real foundation in nature. Some operations of our minds, from their very nature, are *social*, others are *solitary*.

By the first, I understand such operations as necessarily suppose an intercourse with some other intelligent being. A man may understand and will; he may apprehend, and judge, and reason, though he should know of no intelligent being in the universe besides himself. But, when he asks information, or receives it; when he bears testimony, or receives the testimony of another; when he asks a favour, or accepts one; when he gives a command to his servant, or receives one from a superior; when he plights his faith in a promise or contract; these are acts of social intercourse between intelligent beings, and can have no place in solitude. They suppose understanding and will; but they suppose something more, which is neither understanding nor will; that is, society with other intelligent beings. They may be called intel lectual, because they can only be in intellectual beings: But they are neither simple apprehension, nor judgment, nor reasoning, nor are they any combination of these operations.

To ask a question, is as simple an operation as to judge or to reason; yet it is neither judgment, nor reasoning, nor simple apprehension, nor is it any composition of these. Testimony is neither simple apprehension, nor judgment, nor reasoning. The same may be said of a promise, or of a contract. These acts of mind are perfectly understood by every man of common understanding; but, when philosophers attempt to bring them within the pale of their divisions, by analysing them, they find inexplicable mysteries, and even contradictions, in them. One may see an instance of this, of many that might be mentioned, in Mr HUME's Enquiry concerning the Principles of Morals, sect. 3. part 2. note, near the end.

The attempts of philosophers to reduce the social operations under the common philosophical divisions, resemble very much the attempts of some philosophers to reduce all our social affections to certain modifications of self-love. The Author of our being intended us to be social beings, and has, for that end, given us social intellectual powers, as well as social affections. Both are original parts of our constitution, and the exertions of both no less natural than the exertions of those powers that are solitary and selfish.

Our social intellectual operations, as well as our social affections, appear very early in life, before we are capable of reasoning; yet both suppose a conviction of the existence of other intelligent beings. When a child asks a question of his nurse, this act of his mind supposes, not only a desire to know what he asks, it supposes likewise a conviction that the nurse is an intelligent being, to whom he can communicate his thoughts, and who can communicate her thoughts to him. How he came by this conviction so early, is a question of some importance in the knowledge of the human mind, and therefore worthy of the consideration of philosophers. But they seem to have given no attention either to this early conviction, or to those operations of mind which suppose it. Of this we shall have occasion to treat afterwards.

All languages are fitted to express the social as well as the solitary operations of the mind. It may indeed be affirmed, that, to express the former, is the primary and direct intention of language. A man, who had no intercourse with any other intelligent being, would never think of language. He would be as mute as the beasts of the field; even more so, because they have some degree of social intercourse with one another, and some of them with man. When language is once learned, it may be useful even in our solitary meditations; and, by clothing our thoughts with words, we may have a firmer hold of them. But this was not its first intention; and the structure of every language shews that it is not intended solely for this purpose.

In every language, a question, a command, a promise, which are social acts, can be expressed as easily and as properly as judgment, which is a solitary act. The expression of the last has been honoured with a particular name; it is called a proposition; it has been an object of great attention to philosophers; it has been analysed into its very elements, of subject, predicate, and copula. All the various modifications of these, and of propositions which are compounded of them, have been anxiously examined in many voluminous tracts. The expression of a question, of a command, or of a promise, is as capable of being analysed as a proposition is; but we do not find that this has been attempted; we have not so much as given them a name different from the operations which they express.

Why have speculative men laboured so anxiously to analyse our solitary operations, and given so little attention to the social? I know no other reason but this, that, in the divisions that have been made of the mind's operations, the social have been omitted, and thereby thrown behind the curtain.

In all languages, the second person of verbs, the pronoun of the second person, and the vocative case in nouns, are appropriated to the expression of social operations of mind, and could never have had place in language but for this purpose: Nor is it a good argument against this observation, that, by a rhetorical figure, we sometimes address persons that are absent, or even inanimated beings, in the second person. For it ought to be remembered, that all figurative ways of using words or phrases, suppose a natural and literal meaning of them.

ESSAY II.

OF THE POWERS WE HAVE BY MEANS OF OUR EXTERNAL SENSES.

CHAP. I.

Of the Orga[illegible] of Sense.

OF all the operations of our minds, the perception of external objects is the most familiar. The senses come to maturity even in infancy, when other powers have not yet sprung up. They are common to us with brute animals, and furnish us with the objects about which our other powers are the most frequently employed. We find it easy to attend to their operations; and because they are familiar, the names which properly belong to them are applied to other powers, which are thought to resemble them; for these reasons they claim to be first considered.

The perception of external objects is one main link of that mysterious chain, which connects the material world with the intellectual. We shall find many things in this operation unaccountable; sufficient to convince us, that we know but little of our own frame; and that a perfect comprehension of our mental powers, and of the manner of their operation, is beyond the reach of our understanding.

In perception there are impressions upon the organs of sense, the nerves, and brain, which, by the laws of our nature, are followed by certain operations of mind.

These two things are apt to be confounded; but ought most carefully to be distinguished. Some philosophers, without good reason, have concluded, that the impressions made on the body are the proper efficient cause of perception. Others, with as little reason, have concluded, that impressions are made on the mind similar to those made on the body. From these mistakes many others have arisen. The wrong notions men have rashly taken up with regard to the senses, have led to wrong notions with regard to other powers which are conceived to resemble them. Many important powers of mind have, especially of late, been called internal senses, from a supposed resemblance to the external; such as, the sense of beauty, the sense of harmony, the moral sense. And it is to be apprehended, that errors, with regard to the external, have, from analogy, led to similar errors with regard to the internal; it is therefore of some consequence, even with regard to other branches of our subject, to have just notions concerning the external senses.

In order to this, we shall begin with some observations on the organs of sense, and on the impressions which in perception are made upon them, and upon the nerves and brain.

We perceive no external object, but by means of certain bodily organs which God has given us for that purpose. The Supreme Being who made us, and placed us in this world, hath given us such powers of mind as he saw to be suited to our state and rank in his creation. He has given us the power of perceiving many objects around us, the sun, moon, and stars, the earth and sea, and a variety of animals, vegetables, and inanimate bodies. But our power of perceiving these objects is limited in various ways, and particularly in this; that without the organs of the several senses, we perceive no external object. We cannot see without eyes, nor hear without ears: It is not only necessary that we should have these organs, but that they should be in a sound and natural state. There are many disorders of the eye that cause total blindness; others that impair the powers of vision, without destroying it altogether; and the same may be said of the organs of all the other senses.

All this is so well known from experience, that it needs no proof; but it ought to be observed, that we know it from experience only. We can give no reason for it, but that such is the will of our Maker. No man can shew it to be impossible to the Supreme Being to have given us the power of perceiving external objects without such organs. We have reason to believe, that when we put off these bodies, and all the organs belonging to them, our perceptive powers shall rather be improved than destroyed or impaired. We have reason to believe, that the Supreme Being perceives every thing in a much more perfect manner than we do, without bodily organs. We have reason to believe, that there are other created beings endowed with powers of perception more perfect and more extensive than ours, without any such organs as we find necessary.

We ought not, therefore, to conclude, that such bodily organs are, in their own nature, necessary to perception; but rather, that, by the will of God, our power of perceiving external objects is limited and circumscribed by our organs of sense; so that we perceive objects in a certain manner, and in certain circumstances, and in no other.

If a man was shut up in a dark room, so that he could see nothing but through one small hole in the shutter of a window, would he conclude, that the hole was the cause of his seeing, and that it is impossible to see any other way? Perhaps, if he had never in his life seen but in this way, he might be apt to think so; but the conclusion is rash and groundless. He sees; because God has given him the power of seeing; and he sees only through this small hole, because his power of seeing is circumscribed by impediments on all other hands.

Another necessary caution in this matter is, that we ought not to confound the organs of perception with the being that perceives. Perception must be the act of some being that perceives. The eye is not that which sees; it is only the organ by which we see. The ear is not that which hears; but the organ by which we hear; and so of the rest.

A man cannot see the Satellites of Jupiter but by a telescope. Does he conclude from this, that it is the telescope that sees those stars! By no means; such a conclusion would be absurd. It is no less absurd to conclude, that it is the eye that sees, or the ear that hears. The telescope is an artificial organ of sight, but it sees not. The eye is a natural organ of sight, by which we see; but the natural organ sees as little as the artificial.

The eye is a machine most admirably contrived for refracting the rays of light, and forming a distinct picture of objects upon the retina; but it sees neither the object nor the picture. It can form the picture after it is taken out of the head; but no vision ensues. Even when it is in its proper place, and perfectly sound, it is well known, that an obstruction in the optic nerve takes away vision, though the eye has performed all that belongs to it.

If any thing more were necessary to be said on a point so evident, we might observe, that if the faculty of seeing, were in the eye, that of hearing, in the ear, and so of the other senses, the necessary consequence of this would be, that the thinking principle, which I call myself, is not one, but many. But this is contrary to the irresistible conviction of every man. When I say, I see, I hear, I feel, I remember, this implies, that it is one and the same self that performs all these operations; and as it would be absurd to say, that my memory, another man's imagination, and a third man's reason, may make one individual intelligent being, it would be equally absurd to say, that one piece of matter seeing, another hearing, and a third feeling, may make one and the same percipient being.

These sentiments are not new; they have occurred to thinking men from early ages. CICERO, in his Tusculan Questions, lib. i. chap. 20. has expressed them very distinctly. Those who chuse, may consult the passage.

CHAP. II.

Of the Impressions on the Organs, Nerves, and Brain.

A SECOND law of our nature regarding perception is, that we perceive no object, unless some impression is made upon the organ of sense, either by the immediate application of the object, or by some medium which passes between the object and the organ.

In two of our senses, to wit, *touch* and *taste*, there must be an immediate application of the object to the organ. In the other three, the object is perceived at a distance, but still by means of a medium, by which some impression is made upon the organ.

The effluvia of bodies drawn into the nostrils with the breath, are the medium of smell; the undulations of the air, are the medium of hearing; and the rays of light passing from visible objects to the eye, are the medium of sight. We see no object, unless rays of light come from it to the eye. We hear not the sound of any body, unless the vibrations of some elastic medium, occasioned by the tremulous motion of the sounding body, reach our ear. We perceive no smell, unless the effluvia of the smelling body enter into the nostrils. We perceive no taste, unless the sapid body be applied to the tongue, or some part of the organ of taste. Nor do we perceive any tangible quality of a body, unless it touch the hands, or some part of our body.

These are facts known from experience to hold universally and invariably, both in men and brutes. By this law of our nature, our powers of perceiving external objects are farther limited and circumscribed. Nor can we give any other reason for this, than that it is the will of our Maker, who knows best what powers, and what degrees of them, are suited to our state.. We were once in a state, I mean in the womb, wherein our powers of perception were more limited than in the present, and, in a future state, they may be more enlarged.

It is likewise a law of our nature, that, in order to our perceiving objects, the impressions made upon the organs of sense must be communicated to the nerves, and by them to the brain. This is perfectly known to those who know any thing of anatomy.

The nerves are fine cords, which pass from the brain, or from the spinal marrow, which is a production of the brain, to all parts of the body, dividing into smaller branches as they proceed, until at last they escape our eye-sight: And it is found by experience, that all the voluntary and involuntary motions of the body are performed by their means. When the nerves that serve any limb, are cut, or tied hard, we have then no more power to move that limb, than if it was no part of the body.

As there are nerves that serve the muscular motions, so there are others that serve the several senses; and, as without the former, we cannot move a limb, so without the latter, we can have no perception.

This train of machinery, the wisdom of God has made necessary to our perceiving objects. Various parts of the body concur to it, and each has its own function. *First*, The object either immediately, or by some medium, must make an impression on the organ. The organ serves only as a medium, by which an impression is made on the nerve; and the nerve serves as a medium to make an impression upon the brain. Here the material part ends; at least we can trace it no farther; the rest is all intellectual.

The proof of these impressions upon the nerves and brain in perception is this, That, from many observations and experiments, it is found, that when the organ of any sense is perfectly sound, and has the impression made upon it by the object ever so strongly, yet, if the nerve which serves that organ be cut or tied hard, there is no perception: And it is well known, that disorders in the brain deprive us of the power of perception, when both the organ and its nerve are sound.

There is, therefore, sufficient reason to conclude, that, in perception, the object produces some change in the organ; that the organ produces some change upon the nerve; and that the nerve produces some change in the brain. And we give the name of an *impression* to those changes, because we have not a name more proper to express, in a general manner, any change produced in a body, by an external cause, without specifying the nature of that change. Whether it be pressure, or attraction, or repulsion, or vibration, or something unknown, for which we have no name, still it may be called an impression. But with regard to the particular kind of this change or impression, philosophers have never been able to discover any thing at all.

But, whatever be the nature of those impressions upon the organs, nerves, and brain, we perceive nothing without them. Experience informs that it is so; but we cannot give a reason why it is so. In the constitution of man, perception, by fixed laws of nature, is connected with those impressions; but we can discover no necessary connection. The Supreme Being has seen fit to limit our power of perception; so that we perceive not without such impressions; and this is all we know of the matter.

This, however, we have reason to conclude in general, that as the impressions on the organs, nerves, and brain, correspond exactly to the nature and conditions to the objects by which they are made; so our perceptions and sensations correspond to those impressions, and vary in kind, and in degree, as they vary. Without this exact correspondence, the information we receive by our senses would not only be imperfect, as it undoubtedly is, but would be fallacious, which we have no reason to think it is.

CHAP. III.

Hypotheses concerning the Nerves and Brain.

WE are informed by anatomists, that although the two coats which inclose a nerve, and which it derives from the coats of the brain, are tough and elastic; yet the nerve itself has a very small degree of consistence, being almost like marrow. It has, however, a fibrous texture, and may be divided and subdivided, till its fibres escape our senses: And as we know so very little about the texture of the nerves, there is great room left for those who chuse to indulge themselves in conjecture.

The ancients conjectured, that the nervous fibres are fine tubes, filled with a very subtile spirit, or vapour, which they called *animal spirits*; that the brain is a gland, by which the animal spirits are secreted from the finer part of the blood, and their continual waste repaired; and that it is by these animal spirits that the nerves perform their functions. Des Cartes has shewn how, by these animal spirits going and returning in the nerves, muscular motion, perception, memory, and imagination, are effected. All this he has described as distinctly as if he had been an eye-witness of all those operations. But it happens, that the tubular structure of the nerves was never perceived by the human eye, nor shewn by the nicest injections; and all that has been said about animal spirits through more than fifteen centuries, is mere conjecture.

Dr Briggs, who was Sir Isaac Newton's master in anatomy, was the first, as far as I know, who advanced a new system concerning the nerves. He conceived them to be solid filaments of prodigious tenuity; and this opinion, as it accords better with observation, seems to have been more generally received since his time. As to the manner of performing their office, Dr Briggs thought, that, like musical cords, they have vibrations differing according to their length and tension. They seem, however, very unfit for this purpose, on account of their want of tenacity, their moisture, and being through their whole length in contact with moist substances: So that, although Dr Briggs wrote a book upon this system, called *Nova Visionis Theoria*, it seems not to have been much followed.

Sir Isaac Newton, in all his philosophical writings, took great care to distinguish his doctrines, which he pretended to prove by just induction, from his conjectures, which were to stand or fall, according as future experiments and observations should establish or refute them. His conjectures he has put in the form of queries, that they might not be received as truths, but be enquired into, and determined according to the evidence to be found for or against them. Those who mistake his queries for a part of his doctrine, do him great injustice, and degrade him to the rank of the common herd of philosophers, who have in all ages adulterated philosophy, by mixing conjecture with truth, and their own fancies with the oracles of nature. Among other queries, this truly great philosopher proposed this, Whether there may not be an elastic medium, or æther, immensely more rare than air, which pervades all bodies, and which is the cause of gravitation; of the refraction and reflection of the rays of light; of the transmission of heat, through spaces void of air; and of many other phænomena? In the 23d query subjoined to his Optics, he puts this question with regard to the impressions made on the nerves and brain in perception, Whether vision is effected chiefly by the vibrations of this medium, excited in the bottom of the eye by the rays of light, and propagated along the solid, pellucid, and uniform capillaments of the optic nerve? And whether hearing is effected by the vibrations of this or some other medium, excited by the tremor of the air in the auditory nerves, and propagated along the solid, pellucid and uniform capillaments of those nerves? And so with regard to the other senses.

What Newton only proposed as a matter to be enquired into, Dr Hartley conceived to have such evidence, that in his *Observations on Man*, he has deduced, in a mathematical form, a very ample system concerning the faculties of the mind, from the doctrine of vibrations, joined with that of association.

His notion of the vibrations, excited in the nerves, is expressed in propositions 4 and 5. of the first part of his observations on man. " Proposition 4. External " objects impressed on the senses, occasion first in the " nerves on which they are impressed, and then in the " brain, vibrations of the small, and, as one may say, " infinitesimal medullary particles. Prop. 5. The vi- " brations mentioned in the last proposition are excit- " ed, propagated, and kept up, partly by the æther, " that is, by a very subtile elastic fluid; partly by the " uniformity, continuity, softness, and active powers " of the medullary substance of the brain, spinal mar- " row, and nerves."

The modesty and diffidence with which Dr HARTLEY offers his system to the world, by desiring his reader " to expect nothing but hints and conjectures in diffi- " cult and obscure matters, and a short detail of the " principal reasons and evidences in those that are " clear; by acknowledging, that he shall not be able " to execute, with any accuracy, the proper method " of philosophising, recommended and followed by Sir " ISAAC NEWTON; and that he will attempt a sketch " only for the benefit of future inquirers," seem to forbid any criticism upon it. One cannot, without reluctance, criticise what is proposed in such a manner, and with so good intention; yet, as the tendency of this system of vibrations is to make all the operations of the mind mere mechanism, dependant on the laws of matter and motion; and as it has been held forth by its votaries, *as in a manner demonstrated*, I shall make some remarks on that part of the system which relates to the impressions made on the nerves and brain in perception.

It may be observed in general, that Dr HARTLEY's work consists of a chain of propositions, with their proofs and corollaries, digested in good order, and in a scientific form. A great part of them, however, are, as he candidly acknowledges, conjectures and hints only ; yet these are mixed with the propositions legitimately proved, without any distinction. Corollaries are drawn from them, and other propositions grounded upon them, which, all taken together, make up a system. A system of this kind resembles a chain, of which some links are abundantly strong, others very weak. The strength of the chain is determined by that of the weakest links ; for if they give way, the whole falls to pieces, and the weight, supported by it, falls to the ground.

Philosophy has been in all ages adulterated by hypotheses ; that is, by systems built partly on facts, and much upon conjecture. It is pity that a man of Dr HARTLEY's knowledge and candour should have followed the multitude in this fallacious tract, after expressing his approbation of the proper method of philosophising, pointed out by BACON and NEWTON. The last considered it as a reproach, when his system was called his hypothesis ; and says, with disdain of such imputation, *Hypotheses non fingo*. And it is very strange, that Dr HARTLEY should not only follow such a method of philosophising himself, but that he should direct others in their inquiries to follow it. So he does in Proposition 87. Part 1. where he deduces rules for the ascertainment of truth, from the rule of false in arithmetic, and from the art of decyphering; and in other places.

As to the vibrations and vibratiuncles, whether of an elastic æther, or of the infinitesimal particles of the brain and nerves, there may be such things for what we know; and men may rationally inquire whether they can find any evidence of their existence: But while we have no proof of their existence, to apply them to the solution of phenomena, and to build a system upon them, is, what I conceive, we call, building a castle in the air.

When men pretend to account for any of the operations of nature, the causes assigned by them ought, as Sir ISAAC NEWTON has taught us, to have two conditions, otherwise they are good for nothing. *First*, They ought to be true, to have a real existence, and not to be barely conjectured to exist without proof. *Secondly*, They ought to be sufficient to produce the effect.

As to the existence of vibratory motions in the medullary substance of the nerves and brain, the evidence produced is this: *First*, It is observed, that the sensations of seeing and hearing, and some sensations of touch, have some short duration and continuance. *Secondly*, Though there be no direct evidence that the sensations of taste and smell, and the greater part of these of touch, have the like continuance; yet says the author, analogy would incline one to believe, that they must resemble the sensations of sight and hearing in this particular. *Thirdly*, The continuance of all our sensations being thus established, it follows, that external objects impress vibratory motions on the medullary substance of the nerves and brain; because no motion, besides a vibratory one, can reside in any part for a moment of time.

This is the chain of proof; in which the first link is strong, being confirmed by experience; the second is very weak; and the third still weaker. For other kinds of motion, besides that of vibration, may have some continuance, such as rotation, bending or unbending of a spring, and perhaps others which we are unacquainted with; nor do we know whether it is motion that is produced in the nerves, it may be pressure, attraction, repulsion, or something we do not know. This, indeed, is the common refuge of all hypotheses, that we know no other way in which the phenomena may be produced, and therefore they must be produced in this way. There is therefore no proof of vibrations in the infinitesimal particles of the brain and nerves.

It may be thought that the existence of an elastic vibrating æther stands on a firmer foundation, having the authority of Sir ISAAC NEWTON. But it ought to be observed, that although this great man had formed conjectures about this æther near fifty years before he died, and had it in his eye during that long space as a subject of inquiry; yet it does not appear that he ever found any convincing proof of its existence, but considered it to the last as a question, whether there be such an æther or not. In the premonition to the reader, prefixed to the second edition of his Optics, *anno* 1717, he expresses himself thus with regard to it: "Lest any one should think that I place gravity among "the essential properties of bodies, I have subjoined "one question, concerning its cause; a question, I say, "for I do not hold it as a thing established." If, therefore, we regard the authority of Sir ISAAC NEWTON, we ought to hold the existence of such an æther as a matter not established by proof, but to be examined into by experiments; and I have never heard, that, since his time, any new evidence has been found of its existence.

But, says Dr HARTLEY, "supposing the existence of "the æther, and of its properties, to be destitute of

" all direct evidence, still, if it serves to account for " a great variety of phenomena, it will have an " indirect evidence in its favour by this means." There never was an hypothesis invented by an ingenious man which has not this evidence in its favour. The vortices of DES CARTES, the sylphs and gnomes of Mr POPE, serve to account for a great variety of phenomena.

When a man has, with labour and ingenuity, wrought up an hypothesis into a system, he contracts a fondness for it, which is apt to warp the best judgment. This, I humbly think, appears remarkably in Dr HARTLEY. In his preface, he declares his approbation of the method of philosophising recommended and followed by Sir ISAAC NEWTON; but having first deviated from this method in his practice, he is brought at last to justify this deviation in theory, and to bring arguments in defence of a method diametrically opposite to it. " We admit, says he, the " key of a cypher to be a true one, when it explains " the cypher completely." I answer, To find the key requires an understanding equal or superior to that which made the cypher. This instance, therefore, will then be in point, when he who attempts to decypher the works of nature by an hypothesis, has an understanding equal or superior to that which made them. The votaries of hypotheses have often been challenged to shew one useful discovery in the works of nature that was ever made in that way. If instances of this kind could be produced, we ought to conclude that Lord BACON and Sir ISAAC NEWTON have done great disservice to philosophy, by what they have said against hypotheses. But if no such instance can be produced, we must conclude with those great men, that every system which pretends to account for the phænomena of nature by hypotheses or conjecture, is spurious and illegitimate, and serves only to flatter the pride of man with a vain conceit of knowledge which he has not attained.

The author tells us, " that any hypothesis that " has so much plausibility as to explain a consider" able number of facts, helps us to digest these facts " in proper order, to bring new ones to light, and " to make *experimenta crucis* for the sake of future in" quirers "

Let hypotheses be put to any of these uses as far as they can serve : Let them suggest experiments, or direct our inquiries ; but let just induction alone govern our belief.

" The rule of false affords an obvious and strong " instance of the possibility of being led, with pre" cision and certainty, to a true conclusion from a " false position. And it is of the very essence of al" gebra, to proceed in the way of supposition."

This is true ; but, when brought to justify the accounting for natural phænomena by hypotheses, is foreign to the purpose. When an unknown number, or any unknown quantity is sought, which must have certain conditions, it may be found in a scientific manner by the rule of false, or by an algebraical analysis ; and, when found, may be synthetically demonstrated to be the number or the quantity sought, by its answering all the conditions required. But it is one thing to find a quantity which shall have certain conditions ; it is a very different thing to find out the laws by which it pleases God to govern the world, and produce the phænomena which fall under our observation. And we can then only allow some weight to this argument in favour of hypotheses, when it can be shewn, that the cause of any one phænomenon in nature has been, or can be found as an unknown quantity is, by the rule of false, or by algebraical analysis. This, I apprehend, will never be, till the æra arrives, which Dr Hartley seems to foretel, "when future generations shall put all kinds of evi-"dences and inquiries into mathematical forms; "and, as it were, reduce Aristotle's ten Categories, "and Bishop Wilkin's forty *Summa Genera*, to the "head of quantity alone, so as to make mathematics, "and logic, natural history, and civil history, natural "philosophy, and philosophy of all other kinds, coin-"cide *omni ex parte*."

Since Sir Isaac Newton laid down the rules of philosophising in our inquiries into the works of nature, many philosophers have deviated from them in practice; perhaps few have paid that regard to them which they deserve. But they have met with very general approbation, as being founded in reason, and pointing out the only path to the knowledge of nature's works. Dr Hartley is the only author I have met with, who reasons against them, and has taken pains to find out arguments in defence of the exploded method of hypothesis.

Another condition which Sir Isaac Newton requires in the causes of natural things assigned by philosophers, is, that they be sufficient to account for the phænomena. Vibrations and vibratiuncles of the medullary substance of the nerves and brain, are assigned by Dr Hartley to account for all our sensations and ideas, and, in a word, for all the operations of our minds. Let us consider very briefly how far they are sufficient for that purpose.

It would be injustice to this author to conceive him a materialist. He proposes his sentiments with great candour, and they ought not to be carried beyond what his words express. He thinks it a consequence of his theory, that matter, if it can be endued with the most simple kinds of sensation, might arrive at all that intelligence of which the human mind is possessed. He thinks that his theory overturns all the arguments that are usually brought for the immateriality of the soul, from the subtilty of the internal senses, and of the rational faculty; but he does not take upon him to determine whether matter can be endued with sensation or no. He even acknowledges, that matter and motion, however subtilly divided and reasoned upon, yield nothing more than matter and motion still; and therefore he would not be any way interpreted so as to oppose the immateriality of the soul.

It would, therefore, be unreasonable to require that his theory of vibrations should, in the proper sense, account for our sensations. It would, indeed, be ridiculous in any man to pretend, that thought of any kind must necessarily result from motion, or that vibrations in the nerves must necessarily produce thought, any more than the vibrations of a pendulum. Dr HARTLEY disclaims this way of thinking, and therefore it ought not to be imputed to him. All that he pretends is, that, in the human constitution, there is a certain connection between vibrations in the medullary substance of the nerves and brain, and the thoughts of the mind; so that the last depend entirely upon the first, and every kind of thought in the mind arises in consequence of a corresponding vibration, or vibratiuncle in the nerves and brain. Our sensations arise from vibrations, and our ideas from vibratiuncles, or miniature vibrations; and he comprehends, under these two words of *sensations* and *ideas*, all the operations of the mind.

But how can we expect any proof of the connection between vibrations and thought, when the existence of such vibrations was never proved. The proof of their connection cannot be stronger than the proof of their existence: For, as the author acknowledges, that we cannot infer the existence of the thoughts from the existence of the vibrations, it is no less evident, that we cannot infer the existence of vibrations from the existence of our thoughts. The existence of both must be known before we can know their connection. As to the existence of our thoughts, we have the evidence of consciousness; a kind of evidence that never was called in question. But as to the existence of vibrations in the medullary substance of the nerves and brain, no proof has yet been brought.

All therefore we have to expect from this hypothesis, is, that in vibrations considered abstractly, there should be a variety in kind and degree, which tallies so exactly with the varieties of the thoughts they are to account for, as may lead us to suspect some connection between the one and the other. If the divisions and subdivisions of thought be found to run parallel with the divisions and subdivisions of vibrations, this would give that kind of plausibility to the hypothesis of their connection which we commonly expect even in a mere hypothesis; but we do not find even this.

For, to omit all those thoughts and operations which the author comprehends under the name of *ideas*, and which he thinks are connected with vibratiuncles; to omit the perception of external objects, which he comprehends under the name of *sensations;* to omit the sensations, properly so called, which accompany our passions and affections, and to confine ourselves to the sensations which we have by means of our external senses, we can perceive no correspondence b tween the variety we find in their kinds and degree and that which may be supposed in vibrations.

We have five senses, whose sensations differ totall *in kind*. *By* each of these, excepting perhaps that o hearing, we have a variety of sensations, which diffe *specifically, and not in degree only. How many tastes and smells are there which are specifically different,* each of them capable of all degrees of strength and weakness? Heat and cold, roughness and smoothness, hardness and softness, pain and pleasure, are sensations of touch that differ in kind, and each has an endless variety of degrees. Sounds have the qualities of acute and grave, loud and soft, with all different degrees of each. The varieties of colour are many more than we have names to express. How shall we find varieties in vibrations corresponding to all this variety of sensations which we have by our five senses only?

I know two qualities of vibrations in an uniform elastic medium, and I know no more. They may be quick or slow in various degrees, and they may be strong or weak in various degrees; but I cannot find any division of our sensations that will make them tally with those divisions of vibrations. If we had no other sensations but those of hearing, the theory would answer well; for sounds are either acute or grave, which may answer to quick or slow vibrations; or they are loud or soft, which answer to strong or weak vibrations. But then we have no variety of vibrations corresponding to the immense variety of sensations which we have by sight, smell, taste, and touch.

Dr HARTLEY has endeavoured to find out other two qualities of vibrations, to wit, that they may primarily affect one part of the brain or another, and that they may vary in their direction, according as they ente by different external nerves; but these seem to b added to make a number: For, as far as we know vibrations in an uniform elastic substance, spread over the whole, and in all directions. However, that we may be liberal, we shall *grant him four different kinds of vibrations, each of them having as many degrees as he pleases.* Can he, or any man reduce all our sensations to four kinds? We have five senses, and by each of them a variety of sensations, more than sufficient to exhaust all the varieties we are able to conceive in vibrations.

Dr Hartley, indeed, was sensible of the difficulty of finding vibrations to suit all the variety of our sensations. His extensive knowledge of physiology and pathology could yield him but a feeble aid; and therefore he is often reduced to the necessity of heaping supposition upon supposition, conjecture upon conjecture, to give some credibility to his hypothesis; and, in seeking out vibrations which may correspond with the sensations of one sense, he seems to forget that those must be omitted which have been appropriated to another.

Philosophers have accounted in some degree for our various sensations of sound by the vibrations of elastic air. But it is to be observed, *first*, That we know that such vibrations do really exist; and, *secondly*, That they tally exactly with the most remarkable phænomena of sound. We cannot, indeed, shew how any vibration should produce the sensation of sound. This must be resolved into the will of God, or into some cause altogether unknown. But we know, that as the vibration is strong or weak, the sound is loud or soft. We know, that as the vibration is quick or slow, the sound is acute or grave. We can point out that relation of synchronous vibrations which produces harmony or discord, and that relation of successive vibrations which produces melody: And all this is not conjectured, but proved by a sufficient induction. This account of sounds, therefore, is philosophical; although, perhaps, there may be many things relating to sound that we cannot account for, and of which the causes remain latent. The connections described in this branch of philosophy are the work of GOD, and not the fancy of men.

If any thing similar to this could be shewn in accounting for all our sensations by vibrations in the medullary substance of the nerves and brain, it would deserve a place in sound philosophy. But, when we are told of vibrations in a substance, which no man could ever prove to have vibrations, or to be capable of them; when such imaginary vibrations are brought to account for all our sensations, though we can perceive no correspondence in their variety of kind and degree, to the variety of sensations; the connections described in such a system are the creatures of human imagination, not the work of GOD.

The rays of light make an impression upon the optic nerves; but they make none upon the auditory or olfactory. The vibrations of the air make an impression upon the auditory nerves; but none upon the optic or the olfactory. The effluvia of bodies make an impression upon the olfactory nerves; but make none upon the optic or auditory. No man has been able to give a shadow of reason for this. While this is the case, is it not better to confess our ignorance of the nature of those impressions made upon the nerves and brain in perception, than to flatter our pride with the conceit of knowledge which we have not, and to adulterate philosophy with the spurious brood of hypotheses?

CHAP. IV.

False Conclusions drawn from the Impressions before mentioned.

SOME philosophers among the ancients, as well as among the moderns, imagined that man is nothing but a piece of matter so curiously organized, that the impressions of external objects produce in it sensation, perception, remembrance, and all the other operations we are conscious of. This foolish opinion could only take its rise from observing the constant connection which the Author of Nature hath established between certain impressions made upon our senses, and our perception of the objects by which the impression is made; from which they weakly inferred, that those impressions were the proper efficient causes of the corresponding perception.

But no reasoning is more fallacious than this, that because two things are always conjoined, therefore one must be the cause of the other. Day and night have been joined in a constant succession since the beginning of the world; but who is so foolish as to conclude from this, that day is the cause of night, or night the cause of the following day? There is indeed nothing more ridiculous than to imagine that any motion or modification of matter should produce thought.

If one should tell of a telescope so exactly made as to have the power of seeing; of a whispering gallery that had the power of hearing; of a cabinet so nicely framed as to have the power of memory; or of a machine so delicate as to feel pain when it was touched; such absurdities are so shocking to common sense that they would not find belief even among savages; yet it is the same absurdity to think, that the impressions of external objects upon the machine of our bodies, can be the real efficient cause of thought and perception. Passing this therefore as a notion too absurd to admit of reasoning; another conclusion very generally made by philosophers, is, that in perception an impression is made upon the mind as well as upon the organ, nerves, and brain. ARISTOTLE, as was before observed, thought that the form or image of the object perceived, enters by the organ of sense, and strikes upon the mind. Mr HUME gives the name of *impressions* to all our perceptions, to all our sensations, and even to the objects which we perceive. Mr LOCKE affirms very positively, that the ideas of external objects are produced in our minds by impulse, " that being the only way we can " conceive bodies to operate in." It ought, however, to be observed, in justice to Mr LOCKE, that he retracted this notion in his first letter to the Bishop of WORCESTER, and promised, in the next edition of his Essay to have that passage rectified; but either from forgetfulness in the author, or negligence in the printer, the passage remains in all the subsequent editions I have seen.

There is no prejudice more natural to man, than to conceive of the mind as having some similitude to body in its operations. Hence, men have been prone to imagine, that as bodies are put in motion by some impulse or impression made upon them by contiguous bodies; so the mind is made to think and to perceive by some impression made upon it, or some impulse given to it by contiguous objects. If we have such a notion of the mind as HOMER had of his gods, who might be bruised or wounded with swords and spears, we may then understand what is meant by impressions made upon it by a body: But if we conceive the mind to be immaterial, of which I think we have very strong proofs, we shall find it difficult to affix a meaning to *impressions made upon it.*

There is a figurative meaning of impressions on the mind which is well authorised, and of which we took notice in the observations made on that word; but this meaning applies only to objects that are interesting. To say that an object which I see with perfect indifference makes an impression upon my mind, is not, as I apprehend, good English. If philosophers mean no more but that I see the object, why should they invent an improper phrase to express what every man knows how to express in plain English?

But it is evident, from the manner in which this phrase is used by modern philosophers, that they mean not barely to express by it my perceiving an object, but to explain the manner of perception. They think that the object perceived acts upon the mind, in some way similar to that in which one body acts upon another, by making an impression upon it. The impression upon the mind is conceived to be something wherein the mind is altogether passive, and has some effect produced in it by the object. But this is a hypothesis which contradicts the common sense of mankind, and which ought not to be admitted without proof.

When I look upon the wall of my room, the wall does not act at all, nor is capable of acting; the perceiving it is an act or operation in me. That this is the common apprehension of mankind with regard to perception, is evident from the manner of expressing it in all languages.

The vulgar give themselves no trouble how they perceive objects, they express what they are conscious of, and they express it with propriety; but philosophers have an avidity to know how we perceive objects; and conceiving some similitude between a body that is put in motion, and a mind that is made to perceive, they are led to think, that as the body must receive some impulse to make it move, so the mind must receive some impulse or impression to make it perceive. This analogy seems to be confirmed, by observing that we perceive objects only when they make some impression upon the organs of sense, and upon the nerves and brain; but it ought to be observed, that such is the nature of body that it cannot change its state, but by some force impressed upon it. This is not the nature of mind. All that we know about it shows it to be in its nature living and active, and to have the power of perception in its constitution, but still within those limits to which it is confined by the laws of Nature.

It appears, therefore, that this phrase of the mind's having impressions made upon it by corporeal objects in perception, is either a phrase without any distinct meaning, and contrary to the propriety of the English language, or it is grounded upon an hypothesis which is destitute of proof. On that account, though we grant that in perception there is an impression made upon the organ of sense, and upon the nerves and brain, we do not admit that the object makes any impression upon the mind.

There is another conclusion drawn from the impressions made upon the brain in perception, which I conceive to have no solid foundation, though it has been adopted very generally by philosophers. It is, that by the impressions made on the brain, images are formed of the object perceived; and that the mind, being seated in the brain as its chamber of presence, immediately perceives those images only, and has no perception of the external object but by them. This notion of our perceiving external objects, not immediately, but in certain images or species of them conveyed by the senses, seems to be the most ancient philosophical hypothesis we have on the subject of perception, and to have, with small variations, retained its authority to this day.

ARISTOTLE, as was before observed, maintained, that the species, images, or forms of external objects, coming from the object, are impressed on the mind. The followers of DEMOCRITUS and EPICURUS held the same thing, with regard to slender films of subtile matter coming from the object, that ARISTOTLE did with regard to his immaterial species or forms.

ARISTOTLE thought, that every object of human understanding enters at first by the senses; and that the notions got by them are by the powers of the mind refined and spiritualized, so as at last to become objects of the most sublime and abstracted sciences. PLATO, on the other hand, had a very mean opinion of all the knowledge we get by the senses. He thought it did not deserve the name of knowledge, and could not be the foundation of science; because the objects of sense are individuals only, and are in a constant fluctuation. All science, according to him, must be employed about those eternal and immutable ideas, which existed before the objects of sense, and are not liable to any change. In this there was an essential difference between the systems of these two philosophers. The notion of eternal and immutable ideas, which PLATO borrowed from the Pythagorean school, was totally rejected by ARISTOTLE, who held it as a maxim, that there is nothing in the intellect, which was not at first in the senses.

But, notwithstanding this great difference in those two ancient systems, they might both agree as to the manner in which we perceive objects by our senses: And that they did so, I think, is probable; because ARISTOTLE, as far as I know, neither takes notice of any difference between himself and his master upon this point, nor lays claim to his theory of the manner of our perceiving objects as his own invention. It is still more probable from the hints which PLATO gives in the seventh book of his Republic, concerning the manner in which we perceive the objects of sense; which he compares to persons in a deep and dark cave, who see not external objects themselves, but only their shadows, by a light let into the cave through a small opening.

It seems, therefore, probable, that the Pythagoreans and Platonists agreed with the Peripatetics in this general theory of perception; to wit, that the objects of sense are perceived only by certain images, or shadows of them, let into the mind, as into a *camera obscura*.

The notions of the ancients were very various with regard to the seat of the soul. Since it has been discovered, by the improvements in anatomy, that the nerves are the instruments of perception, and of the sensations accompanying it, and that the nerves ultimately terminate in the brain, it has been the general opinion of philosophers that the brain is the seat of the soul; and that she perceives the images that are brought there, and external things only by means of them.

DES CARTES, observing that the pineal gland is the only part of the brain that is single, all the other parts being double, and thinking that the soul must have one seat, was determined by this to make that gland the soul's habitation, to which, by means of the animal spirits, intelligence is brought of all objects that affect the senses.

Others have not thought proper to confine the habitation of the soul to the pineal gland, but to the brain in general, or to some part of it, which they call the *sensorium*. Even the great NEWTON favoured this opinion, though he proposes it only as a query, with that modesty which distinguished him no less than his great genius. " Is not, says he, the sensorium of animals, the place where the sentient substance is present, and to which the sensible species of things are brought through the nerves and brain, that there they may be perceived by the mind present in that place? And is there not an incorporeal, living, intelligent, and omnipresent Being, who, in infinite space, as if it were in his sensorium, intimately perceives things themselves, and comprehends them perfectly, as being present to them; of which things, that principles in us which perceives and thinks, discerns only, in its little sensorium, the images brought to it through the organs of the senses?"

His friend, Dr SAMUEL CLARKE, adopted the same sentiments with more confidence. In his papers to LEIBNITZ, we find the following passages: " Without being present to the images of the things perceived, it (the soul) could not possibly perceive them. A living substance can only there perceive where it is present, either to the things themselves, (as the omnipresent GOD is to the whole universe), or to the images of things, (as the soul of man is in its proper sensory.) Nothing can any more act, or be acted upon, where it is not present, than it can be where it is not. We are sure the soul cannot perceive what it is not present to, because nothing can act, or be acted upon, where it is not."

Mr LOCKE expresses himself so upon this point, that for the most part, one would imagine, that he thought that the ideas, or images of things, which he believed to be the immediate objects of perception, are impressions upon the mind itself; yet in some passages, he rather places them in the brain, and makes them to be perceived by the mind there present. "There "are some ideas, says he, which have admittance only "through one sense; and if the organs or the nerves, "which are the conduits to convey them from with-"out to their audience in the brain, the mind's pre-"sence-room, if I may so call it, are so disordered as "not to perform their function, they have no postern "to be admitted by.

"There seems to be a constant decay of all our "ideas, even of those that are struck deepest. The "pictures drawn in our minds are laid in fading co-"lours. Whether the temper of the brain makes this "difference, that in some it retains the characters "drawn on it like marble, in others like free-stone, "and in others little better than sand, I shall not en-"quire."

From these passages of Mr LOCKE, and others of a like nature, it is plain, that he thought that there are images of external objects conveyed to the brain. But whether he thought with DES CARTES and NEWTON, that the images in the brain are perceived by the mind there present, or that they are imprinted on the mind itself, is not so evident.

Now, with regard to this hypothesis, there are three things that deserve to be considered, because the hypothesis leans upon them; and, if any one of them fail, it must fall to the ground. The *first* is, That the soul has its seat, or, as LOCKE calls it, its presence-room, in the brain. The *second*, That there are images formed in the brain of all the objects of sense. The *third*, That the mind or soul perceives these images in the brain; and that it perceives not external objects immediately, but only by means of their images.

As to the *first* point, That the soul has its seat in the brain, this, surely, is not so well established, as that we can safely build other principles upon it. There have been various opinions, and much disputation about the place of spirits; whether they have a place? and if they have, how they occupy that place? After men had fought in the dark about these points for ages, the wiser part seem to have left off disputing about them, as matters beyond the reach of the human faculties.

As to the *second* point, That images of all the objects of sense are formed in the brain, we may venture to affirm, that there is no proof nor probability of this, with regard to any of the objects of sense; and that with regard to the greater part of them, it is words without any meaning.

We have not the least evidence, that the image of any external object is formed in the brain. The brain has been dissected times innumerable by the nicest anatomists; every part of it examined by the naked eye, and with the help of microscopes; but no vestige of an image of any external object was ever found. The brain seems to be the most improper substance that can be imagined for receiving or retaining images, being a soft moist medullary substance.

But how are these images formed? or whence do they come? Says Mr LOCKE, the organs of sense and nerves convey them from without. This is just the Aristotelian hypothesis of sensible species, which modern philosophers have been at great pains to refute, and which must be acknowledged to be one of the most unintelligible parts of the Peripatetic system. Those who consider species of colour, figure, sound, and smell, coming from the object, and entering by the organs of sense, as a part of the scholastic jargon, long ago discarded from sound philosophy, ought to have discarded images in the brain along with them. There never was a shadow of argument brought by any author, to shew that an image of any external object ever entered by any of the organs of sense.

That external objects make some impression on the organs of sense, and by them on the nerves and brain, is granted; but that those impressions resemble the objects they are made by, so as that they may be called images of the objects, is most improbable. Every hypothesis that has been contrived, shews that there can be no such resemblance; for neither the motions of animal spirits, nor the vibrations of elastic chords, or of elastic æther, or of the infinitesimal particles of the nerves, can be supposed to resemble the objects by which they are excited.

We know, that, in vision, an image of the visible object is formed in the bottom of the eye by the rays of light. But we know also, that this image cannot be conveyed to the brain, because the optic nerve, and all the parts that surround it, are opaque and impervious to the rays of light; and there is no other organ of sense in which any image of the object is formed.

It is farther to be observed, that, with regard to some objects of sense, we may understand what is meant by an image of them imprinted on the brain; but, with regard to most objects of sense, the phrase is absolutely unintelligible, and conveys no meaning at all. As to objects of sight, I understand what is meant by an image of their figure in the brain : But how shall w conceive an image of their colour where there is absolute darkness ? And as to all other objects of sense except figure and colour, I am unable to conceive what is meant by an image of them. Let any man say, what he means by an image of heat and cold, an image of hardness or softness, an image of sound, o smell, or taste. The word *image*, when applied to these objects of sense, has absolutely no meaning Upon what a weak foundation, then, does this hypothesis stand, when it supposes, that images of all the objects of sense are imprinted on the brain, being conveyed thither by the conduits of the organs and nerves.

The *third* point in this hypothesis, is, That the mind perceives the images in the brain, and external objects only by means of them. This is as improbable, as that there are such images to be perceived. If our powers of perception be not altogether fallacious, the objects we perceive are not in our brain, but without us. We are so far from perceiving images in the brain, that we do not perceive our brain at all ; nor would any man ever have known that he had a brain, if anatomy had not discovered, by dissection, that the brain is a constituent part of the human body.

To sum up what has been said with regard to the organs of perception, and the impressions made upon our nerves and brain. It is a law of our nature, established by the will of the Supreme Being, that we perceive no external object but by means of the organs given us for that purpose. But these organs do not perceive. The eye is the organ of sight, but it sees not. A telescope is an artificial organ of sight. The eye is a natural organ of sight, but it sees as little as the telescope. We know how the eye forms a picture of the visible object upon the retina; but how this picture makes us see the object we know not; and if experience had not informed us that such a picture is necessary to vision, we should never have known it. We can give no reason why the picture on the retina should be followed by vision, while a like picture on any other part of the body produces nothing like vision.

It is likewise a law of our nature, that we perceive not external objects, unless certain impressions be made by the object upon the organ, and by means of the organ upon the nerves and brain. But of the nature of those impressions we are perfectly ignorant; and though they are conjoined with perception by the will of our Maker, yet it does not appear that they have any necessary connection with it in their own nature, far less that they can be the proper efficient cause of it. We perceive, because GOD has given us the power of perceiving, and not because we have impressions from objects. We perceive nothing without those impressions, because our Maker has limited and circumscribed our powers of perception, by such laws of nature as to his wisdom seemed meet, and such as suited our rank in his creation.

CHAP. V.

Of Perception.

IN speaking of the impressions made on our organs in perception, we build upon facts borrowed from anatomy and physiology, for which we have the testimony of our senses. But being now to speak of perception itself, which is solely an act of the mind, we must appeal to another authority. The operations of our minds are known not by sense, but by consciousness, the authority of which is as certain and as irresistible as that of sense.

In order, however, to our having a distinct notion of any of the operations of our own minds, is it not enough that we be conscious of them, for all men have this consciousness: It is farther necessary that we attend to them while they are exerted, and reflect upon them with care, while they are recent and fresh in our memory. It is necessary that, by employing ourselves frequently in this way, we get the habit of this attention and reflection; and therefore, for the proof of facts which I shall have occasion to mention upon this subject, I can only appeal to the reader's own thoughts, whether such facts are not agreeable to what he is conscious of in his own mind.

If, therefore, we attend to that act of our mind which we call the perception of an external object of sense, we shall find in it these three things. *First*, Some conception or notion of the object perceived. *Secondly*, A strong and irresistible conviction and belief of its present existence. And, *thirdly*, That this conviction and belief are immediate, and not the effect of reasoning.

First, It is impossible to perceive an object without having some notion or conception of that which we perceive. We may indeed conceive an object which we do not perceive; but when we perceive the object, we must have some conception of it at the same time; and we have commonly a more clear and steady notion of the object while we perceive it, than we have from memory or imagination when it is not perceived. Yet, even in perception, the notion which our senses give of the object may be more or less clear, more or less distinct, in all possible degrees.

Thus we see more distinctly an object at a small than at a great distance. An object at a great distance is seen more distinctly in a clear than in a foggy day. An object seen indistinctly with the naked eye, on account of its smallness, may be seen distinctly with a microscope. The objects in this room will be seen by a person in the room less and less distinctly as the light of the day fails; they pass through all the various degrees of distinctness according to the degrees of the light, and at last, in total darkness, they are not seen at all. What has been said of the objects of sight is so easily applied to the objects of the other senses, that the application may be left to the reader.

In a matter so obvious to every person capable of reflection, it is necessary only farther to observe, that the notion which we get of an object, merely by our external sense, ought not to be confounded with that more scientific notion which a man, come to the years of understanding, may have of the same object, by attending to its various attributes, or to its various parts, and their relation to each other, and to the whole. Thus the notion which a child has of a jack for roasting meat, will be acknowledged to be very different from that of a man who understands its construction, and perceives the relation of the parts to one another, and to the whole. The child sees the jack and every part of it as well as the man: The child, therefore, has all the notion of it which sight gives; whatever there is more in the notion which the man forms of it, must be derived from other powers of the mind, which may afterwards be explained. This observation is made here only, that we may not confound the operations of different powers of the mind, which, by being always conjoined after we grow up to understanding, are apt to pass for one and the same.

Secondly, In perception we not only have a notion more or less distinct of the object perceived, but also an irresistible conviction and belief of its existence. This is always the case when we are certain that we perceive it. There may be a perception so faint and indistinct, as to leave us in doubt whether we perceive the object or not. Thus, when a star begins to twinkle as the light of the sun withdraws, one may, for a short time, think he sees it, without being certain, until the perception acquires some strength and steadiness. When a ship just begins to appear in the utmost verge of the horizon, we may at first be dubious whether we perceive it or not: But when the perception is in any degree clear and steady, there remains no doubt of its reality; and when the reality of the perception is ascertained, the existence of the object perceived can no longer be doubted.

By the laws of all nations, in the most solemn judicial trials wherein mens fortunes and lives are at stake, the sentence passes according to the testimony of eye or ear witnesses of good credit. An upright judge will give a fair hearing to every objection that can be made to the integrity of a witness, and allow it to be possible that he may be corrupted; but no judge will ever suppose, that witnesses may be imposed upon by trusting to their eyes and ears: And if a sceptical counsel should plead against the testimony of the witnesses, that they had no other evidence for what they declared but the testimony of their eyes and ears, and that we ought not to put so much faith in our senses, as to deprive men of life or fortune upon their testimony, surely no upright judge would admit a plea of this kind. I believe no counsel, however sceptical, ever dared to offer such an argument; and if it was offered, it would be rejected with disdain.

Can any stronger proof be given, that it is the universal judgment of mankind that the evidence of sense is a kind of evidence which we may securely rest upon in the most momentous concerns of mankind: That it is a kind of evidence against which we ought not to admit any reasoning; and therefore, that to reason either for or against it, is an insult to common sense?

The whole conduct of mankind, in the daily occurrences of life, as well as the solemn procedure of judicatories in the trial of causes, civil and criminal, demonstrates this. I know only of two exceptions that may be offered against this being the universal belief of mankind.

The first exception is that of some lunatics, who have been persuaded of things that seem to contradict the clear testimony of their senses. It is said there have been lunatics and hypochondriacal persons, who seriously believed themselves to be made of glass; and, in consequence of this, lived in continual terror of having their brittle frame shivered into pieces.

All I have to say to this is, that our minds, in our present state, are as well as our bodies, liable to strong disorders; and as we do not judge of the natural constitution of the body, from the disorders or diseases to which it is subject from accidents, so neither ought we to judge of the natural powers of the mind from its disorders, but from its sound state. It is natural to man, and common to the species, to have two hands and two feet; yet I have seen a man, and a very ingenious one, who was born without either hands or feet. It is natural to man to have faculties superior to those of brutes; yet we see some individuals, whose faculties are not equal to those of many brutes; and the wisest man may, by various accidents, be reduced to this state. General rules that regard those whose intellects are sound, are not overthrown by instances of men whose intellects are hurt by any constitutional or accidental disorder.

The other exception that may be made to the principle we have laid down, is that of some philosophers who have maintained, that the testimony of sense is fallacious, and therefore ought never to be trusted. Perhaps it might be a sufficient answer to this to say, that there is nothing so absurd which some philosophers have not maintained. It is one thing to profess a doctrine of this kind, another seriously to believe it, and to be governed by it in the conduct of life. It is evident, that a man who did not believe his senses, could not keep out of harm's way an hour of his life; yet, in all the history of philosophy, we never read of any sceptic that ever stepped into fire or water because he did not believe his senses, or that shewed, in the conduct of life, less trust in his senses than other men have. This gives us just ground to apprehend, that philosophy was never able to conquer that natural belief which men have in their senses; and that all their subtile reasonings against this belief were never able to persuade themselves.

It appears, therefore, that the clear and distinct testimony of our senses carries irresistible conviction along with it, to every man in his right judgment.

I observed, *thirdly*, That this conviction is not only irresistible, but it is immediate; that is, it is not by a train of reasoning and argumentation that we come to be convinced of the existence of what we perceive; we ask no argument for the existence of the object, but that we perceive it; perception commands our belief upon its own authority, and disdains to rest its authority upon any reasoning whatsoever.

The conviction of a truth may be irresistible, and yet not immediate. Thus, my conviction that the three angles of every plain triangle, are equal to two right angles, is irresistible, but it is not immediate: I am convinced of it by demonstrative reasoning. There are other truths in mathematics of which we have not only an irresistible, but an immediate conviction. Such are the axioms Our belief of the axioms in mathematics is not grounded upon argument. Arguments are grounded upon them, but their evidence is discerned immediately by the human understanding.

It is, no doubt, one thing to have an immediate conviction of a self-evident axiom; it is another thing to have an immediate conviction of the existence of what we see: But the conviction is equally immediate and equally irresistible in both cases. No man thinks of seeking a reason to believe what he sees; and, before we are capable of reasoning, we put no less confidence in our senses than after. The rudest savage is as fully convinced of what he sees, and hears, and feels, as the most expert logician. The constitution of our understanding determines us to hold the truth of a mathematical axiom as a first principle, from which other truths may be deduced, but it is deduced from none; and the constitution of our power of perception determines us to hold the existence of what we distinctly perceive as a first principle, from which other truths may be deduced, but it is deduced from none. What has been said of the irresistible and immediate belief of the existence of objects distinctly perceived, I mean only to affirm with regard to persons so far advanced in understanding, as to distinguish objects of mere imagination from things which have a real existence. Every man knows that he may have a notion of Don Quixote, or of Garagantua, without any belief that such persons ever existed; and that of Julius Cæsar and of

Oliver Cromwell, he has not only a notion, but a belief that they did really exist. But whether children, from the time that they begin to use their senses, make a distinction between things which are only conceived or imagined, and things which really exist, may be doubted. Until we are able to make this distinction, we cannot properly be said to believe or to disbelieve the existence of any thing. The belief of the existence of any thing seems to suppose a notion of existence; a notion too abstract, perhaps, to enter into the mind of an infant. I speak of the power of perception in those that are adult, and of a sound mind, who believe that there are some things which do really exist; and that there are many things conceived by themselves, and by others, which have no existence. That such persons do invariably ascribe existence to every thing which they distinctly perceive, without seeking reasons or arguments for doing so, is perfectly evident from the whole tenor of human life.

The account I have given of our perception of external objects, is intended as a faithful delineation of what every man, come to years of understanding, and capable of giving attention to what passes in his own mind, may feel in himself. In what manner the notion of external objects, and the immediate belief of their existence, is produced by means of our senses, I am not able to shew, and I do not pretend to shew. If the power of perceiving external objects in certain circumstances, be a part of the original constitution of the human mind, all attempts to account for it will be vain: No other account can be given of the constitution of things, but the will of Him that made them. As we can give no reason why matter is extended and inert, why the mind thinks, and is conscious of its thoughts, but the will of Him who made both; so I suspect we can give no other reason why, in certain circumstances, we perceive external objects, and in others do not.

The Supreme Being intended, that we should have such knowledge of the material objects that surround us, as is necessary in order to our supplying the wants of nature, and avoiding the dangers to which we are constantly exposed; and he has admirably fitted our powers of perception to this purpose. If the intelligence we have of external objects were to be got by reasoning only, the greatest part of men would be destitute of it; for the greatest part of men hardly ever learn to reason; and in infancy and childhood no man can reason: Therefore, as this intelligence of the objects that surround us, and from which we may receive so much benefit or harm, is equally necessary to children and to men, to the ignorant and to the learned, God in his wisdom conveys it to us in a way that puts all upon a level. The information of the senses is as perfect, and gives as full conviction to the most ignorant, as to the most learned.

CHAP. VI.

What it is to account for a Phænomenon in Nature.

AN object placed at a proper distance, and in a good light, while the eyes are shut, is not perceived at all; but no sooner do we open our eyes upon it, than we have, as it were by inspiration, a certain knowledge of its existence, of its colour, figure, and distance. This is a fact which every one knows. The vulgar are satisfied with knowing the fact, and give themselves no trouble about the cause of it: But a philosopher is impatient to know how this event is produced, to account for it, or assign its cause.

This avidity to know the causes of things is the parent of all philosophy true and false. Men of speculation place a great part of their happiness in such knowledge. *Felix qui potuit rerum cognoscere causas*, has always been a sentiment of human nature. But as, in the pursuit of other kinds of happiness, men often mistake the road, so in none have they more frequently done it, than in the philosophical pursuit of the causes of things.

It is a dictate of common sense, that the causes we assign of appearances ought to be real, and not fictions of human imagination. It is likewise self-evident, that such causes ought to be adequate to the effects that are conceived to be produced by them.

That those who are less accustomed to inquiries into the causes of natural appearances, may the better understand what it is to shew the cause of such appearances, or to account for them; I shall borrow a plain instance of a phænomenon or appearance, of which a full and satisfactory account has been given. The phænomenon is this: That a stone, or any heavy body, falling from a height, continually increases its velocity as it descends; so that if it acquire a certain velocity in one second of time, it will have twice that velocity at the end of two seconds, thrice at the end of three seconds, and so on in proportion to the time. This accelerated velocity in a stone falling must have been observed from the beginning of the world; but the first person, as far as we know, who accounted for it in a proper and philosophical manner, was the famous GALILEO; after innumerable false and fictitious accounts had been given of it.

He observed, that bodies once put in motion, continue that motion with the same velocity, and in the same direction, until they be stopped or retarded, or have the direction of their motion altered, by some force impressed upon them. This property of bodies is called their *inertia*, or inactivity; for it implies no more than that bodies cannot of themselves change their state from rest to motion, or from motion to rest. He observed also, that gravity acts constantly and equally upon a body, and therefore will give equal degrees of velocity to a body in equal times. From these principles, which are known from experience to be fixed laws of Nature, GALILEO shewed, that heavy bodies must descend with a velocity uniformly accelerated, as by experience they are found to do.

For if the body by its gravitation acquire a certain velocity at the end of one second, it would, though its gravitation should cease that moment, continue to go on with that velocity; but its gravitation continues, and will in another second give it an additional velocity, equal to that which it gave in the first; so that the whole velocity at the end of two seconds will be twice as great as at the end of one. In like manner, this velocity being continued through the third second, and having the same addition by gravitation as in any of the preceding, the whole velocity at the end of the third second will be thrice as great as at the end of the first, and so on continually.

We may here observe, that the causes assigned of this phænomenon are two: *First*, That bodies once put in motion, retain their velocity and their direction, until it is changed by some force impressed upon them. *Secondly*, That the weight or gravitation of a body is always the same. These are laws of nature, confirmed by universal experience, and therefore are not feigned, but true causes; then, they are precisely adequate to the effect ascribed to them; they must necessarily produce that very motion in descending bodies which we find to take place; and neither more nor less. The account therefore given of this phænomenon is just and philosophical; no other will ever be required or admitted by those who understand this.

It ought likewise to be observed. that the causes assigned of this phænomenon are things of which we can assign no cause. Why bodies once put in motion continue to move; why bodies constantly gravitate towards the earth with the same force, no man has been able to shew. These are facts confirmed by universal experience, and they must no doubt have a cause; but their cause is unknown, and we call them laws of nature, because we know no cause of them but the will of the Supreme Being.

But may we not attempt to find the cause of gravitation, and of other phænomena which we call laws of nature? No doubt we may. We know not the limit which has been set to human knowledge, and our knowledge of the works of God can never be carried too far: But, supposing gravitation to be accounted for, by an æthereal elastic medium for instance, this can only be done, *first*, By proving the existence and the elasticity of this medium; and, *secondly*, By shewing, that this medium must necessarily produce that gravitation which bodies are known to have. Until this be done, gravitation is not accounted for, nor is its cause known; and when this is done, the elasticity of this medium will be considered as a law of nature, whose cause is unknown. The chain of natural causes has, not unfitly, been compared to a chain hanging down from heaven: A link that is discovered supports the links below it, but it must itself be supported; and that which supports it must be supported, until we come to the first link, which is supported by the throne of the Almighty. Every natural cause must have a cause, until we ascend to the first cause which, is uncaused, and operates not by necessity, but by will.

By what has been said in this chapter, those who are but little acquainted with philosophical inquiries, may see what is meant by accounting for a phænomenon, or shewing its cause, which ought to be well understood, in order to judge of the theories by which philosophers have attempted to account for our perception of external objects by the senses.

CHAP. VII.

Sentiments of Philosophers about the Perception of External Objects; and, first,

Of the Theory of Father MALEBRANCHE.

HOW the correspondence is carried on between the thinking principle within us, and the material world without us, has always been found a very difficult problem to thoſe philosophers who think themselves obliged to account for every phænomenon in nature. Many philosophers, ancient and modern, have employed their invention to discover how we are made to perceive external objects by our senses: And there appears to be a very great uniformity in their sentiments in the main, notwithstanding their variations in particular points.

PLATO illustrates our manner of perceiving the objects of sense, in this manner: He supposes a dark subterraneous cave, in which men lie bound in such a manner, that they can direct their eyes only to one part of the cave: Far behind, there is a light, some rays of which come over a wall to that part of the cave which is before the eyes of our prisoners. A number of persons, variously employed, pass between them and the light, whose shadows are seen by the prisoners, but not the persons themselves.

In this manner, that philosopher conceived, that, by our senses, we perceive the shadows of things only, and not things themselves. He seems to have borrowed his notions on this subject from the Pythagoreans, and they very probably from PYTHAGORAS himself. If we make allowance for PLATO's allegorical genius, his sentiments on this subject correspond very well with those of his scholar ARISTOTLE, and of the Peripatetics. The shadows of PLATO may very well represent the species and phantasms of the Peripatetic school, and the ideas and impressions of modern philosophers.

Two thousand years after PLATO, Mr LOCKE, who studied the operations of the human mind so much, and with so great success, represents our manner of perceiving external objects, by a similitude very much resembling that of the cave. "Methinks, says he, "the understanding is not much unlike a closet wholly shut from light, with only some little opening left, "to let in external visible resemblances, or ideas of "things without. Would the pictures coming into "such a dark room but stay there, and lie so orderly "as to be found upon occasion, it would very much "resemble the understanding of a man, in reference "to all objects of sight, and the ideas of them."

PLATO's subterranean cave, and Mr LOCKE's dark closet, may be applied with ease to all the systems of perception that have been invented: For they all suppose that we perceive not external objects immediately, and that the immediate objects of perception are only certain shadows of the external objects. Those shadows or images, which we immediately perceive, *were by the ancients, called species, forms, phantasms.* Since the time of DES CARTES, they have commonly been called *ideas*, and by Mr HUME *impressions*. But all philosophers, from PLATO to Mr HUME, agree in this, That we do not perceive external objects immediately, and that the immediate object of perception must be some image present to the mind. So far there appears an unanimity, rarely to be found among philosophers on such abstruse points.

If it should be asked, Whether, according to the opinion of philosophers, we perceive the images or ideas only, and infer the existence and qualities of the external object from what we perceive in the image? Or, whether we really perceive the external object as well as its image? The answer to this question is not quite obvious.

On the one hand, philosophers, if we except BERKELEY and HUME, believe the existence of external objects of sense, and call them objects of perception, though not immediate objects. But what they mean by a mediate object of perception, I do not find clearly explained; whether they suit their language to popular opinion, and mean that we perceive external objects in that figurative sense, in which we say that we perceive an absent friend when we look on his picture; or whether they mean, that really, and without a figure, we perceive both the external object and its idea in the mind. If the last be their meaning, it would follow, that, in every instance of perception, there is a double object perceived: That I perceive, for instance, one sun in the heavens, and another in my own mind. But I do not find that they affirm this; and, as it contradicts the experience of all mankind, I will not impute it to them.

It seems, therefore, that their opinion is, That we do not really perceive the external object, but the in-

ternal only; and that when they speak of perceiving external objects, they mean it only in a popular or in a figurative sense, as above explained. Several reasons lead me to think this to be the opinion of philosophers, beside what is mentioned above. *First*, If we do really perceive the external object itself, there seems to be no necessity, no use, for an image of it. *Secondly*, Since the time of DES CARTES, philosophers have very generally thought that the existence of external objects of sense requires proof, and can only be proved from the existence of their ideas. *Thirdly*, The way in which philosophers speak of ideas, seems to imply that they are the only objects of perception.

Having endeavoured to explain what is common to philosophers in accounting for our perception of external objects, we shall give some detail of their differences.

The ideas by which we perceive external objects, are said by some to be the ideas of the Deity; but it has been more generally thought, that every man's ideas are proper to himself, and are either in his mind, or in his *sensorium*, where the mind is immediately present. The *first* is the theory of MALEBRANCHE; the *second* we shall call the common theory.

With regard to that of MALEBRANCHE, it seems to have some affinity with the Platonic notion of ideas, but is not the same. PLATO believed that there are three eternal first principles, from which all things have their origin; matter, ideas, and an efficient cause. Matter is that of which all things are made, which, by all the ancient philosophers, was conceived to be eternal. Ideas are forms without matter of every kind of things which can exist; which forms were also conceived by PLATO to be eternal and immutable, and to be the models or patterns by which the efficient cause, that is the Deity, formed every part of this universe. These ideas were conceived to be the sole objects of science, and indeed of all true knowledge. While we are imprisoned in the body, we are prone to give attention to the objects of sense only; but these being individual things, and in a constant fluctuation, being indeed shadows rather than realities, cannot be the object of real knowledge. All science is employed, not about individual things, but about things universal and abstract from matter. Truth is eternal and immutable, and therefore must have for its object eternal and immutable ideas; these we are capable of contemplating in some degree even in our present state, but not without a certain purification of mind, and abstraction from the objects of sense. Such, as far as I am able to comprehend, were the sublime notions of PLATO, and probably of PYTHAGORAS.

The philosophers of the Alexandrian school, commonly called the latter Platonists, seem to have adopted the same system; but with this difference, that they made the eternal ideas not to be a principle distinct from the Deity, but to be in the divine intellect, as the objects of those conceptions which the divine mind must from all eternity have had, not only of every thing which he has made, but of every possible existence, and of all the relations of things: By a proper purification and abstraction from the objects of sense, we may be in some measure united to the Deity, and in the eternal light be enabled to discern the most sublime intellectual truths.

These Platonic notions, grafted upon Christianity, probably gave rise to the sect called *Mystics*, which, though in its spirit and principles extremely opposite

but by means of images or ideas of them present to the mind. "I suppose, says he, that every one will "grant that we perceive not the objects that are "without us immediately, and of themselves. We "see the sun, the stars, and an infinity of objects "without us; and it is not at all likely that the soul "sallies out of the body, and, as it were, takes a walk "through the heavens to contemplate all those ob-"jects: She sees them not, therefore, by themselves; "and the immediate object of the mind, when it sees "the sun, for example, is not the sun, but something "which is intimately united to the soul; and it is "that which I call an idea: So that by the word *idea*, "I understand nothing else here but that which is "the immediate object, or nearest to the mind, when "we perceive any object. It ought to be carefully "observed, that in order to the mind's perceiving any "object, it is absolutely necessary that the idea of "that object be actually present to it. Of this it is "not possible to doubt. The things which the soul "perceives are of two kinds.. They are either in the "soul, or they are without the soul: Those that are "in the soul are its own thoughts, that is to say, all "its different modifications. The soul has no need "of ideas for perceiving these things. But with re-"gard to things without the soul, we cannot perceive "them but by means of ideas."

Having laid this foundation, as a principle which was common to all philosophers, and which admitted of no doubt, he proceeds to enumerate all the possible ways by which the ideas of sensible objects may be presented to the mind: Either, *first*, they come from the bodies which we perceive; or, *secondly*, the soul has the power of producing them in itself; or, *thirdly*, they are produced by the Deity, either in our creation, or occasionally as there is use for them; or, *fourthly*, the soul has in itself virtually and eminently, as the schools speak, all the perfections which it perceives in bodies; or, *fifthly*, the soul is united with a being possessed of all perfection, who has in himself the ideas of all created things.

This he takes to be a complete enumeration of all the possible ways in which the ideas of external objects may be presented to our minds: He employs a whole chapter upon each; refuting the four first, and confirming the last by various arguments. The Deity, being always present to our minds in a more intimate manner than any other being, may, upon occasion of the impressions made on our bodies, discover to us, as far as he thinks proper, and according to fixed laws, his own ideas of the object; and thus we see all things in GOD, or in the divine ideas.

However visionary this system may appear on a superficial view, yet when we consider, that he agreed with the whole tribe of philosophers in conceiving ideas to be the immediate objects of perception, and that he found insuperable difficulties, and even absurdities in every other hypothesis concerning them, it will not appear so wonderful that a man of very great genius should fall into this; and probably it pleased so devout a man the more, that it sets in the most striking light our dependence upon GOD, and his continual presence with us.

He distinguished more accurately than any philosopher had done before, the objects which we perceive from the sensations in our own minds, which by the laws of nature always accompany the perception of the object. As in many things, so particularly in this he has great merit: For this, I apprehend, is a key that opens the way to a right understanding both of our external senses, and of other powers of the mind. The vulgar confound sensation with other powers of the mind, and with their objects, because the purposes of life do not make a distinction necessary. The confounding of these in common language has led philosophers, in one period, to make those things external which really are sensations in our own minds; and in another period, running, as is usual, into the contrary extreme, to make almost every thing to be a sensation or feeling in our minds.

It is obvious that the system of MALEBRANCHE leaves no evidence of the existence of a material world, from what we perceive by our senses; for the divine ideas, which are the objects immediately perceived, were the same before the world was created. MALEBRANCHE was too acute not to discern this consequence of his system, and too candid not to acknowledge it: He fairly owns it, and endeavours to make advantage of it, resting the complete evidence we have of the existence of matter upon the authority of revelation: He shews that the arguments brought by DES CARTES to prove the existence of a material world, though as good as any that reason could furnish, are not perfectly conclusive; and though he acknowledges with DES CARTES, that we feel a strong propensity to believe the existence of a material world, yet he thinks this is not sufficient; and that to yield to such propensities without evidence, is to expose ourselves to perpetual delusion. He thinks, therefore, that the only convincing evidence we have of the existence of a material world is, that we are assured by revelation that GOD created the heavens and the earth, and that the Word was made flesh: He is sensible of the ridicule to which so strange an opinion may expose him among those who are guided by prejudice; but, for the sake of truth, he is willing to bear it. But no author, not even Bishop BERKELEY, hath shewn more clearly, that either upon his own system, or upon the common principles of philosophers with regard to ideas, we have no evidence left, either from reason or from our senses, of the existence of a material world. It is no more than justice to father MALEBRANCHE to acknowledge, that Bishop BERKELEY's arguments are to be found in him in their whole force.

Mr NORRIS, an English divine, espoused the system of MALEBRANCHE, in his Essay towards the Theory of the Ideal or Intellectual World, published in two volumes 8vo. anno 1701. This author has made a feeble effort to supply a defect which is to be found not in MALEBRANCHE only, but in almost all the authors who have treated of ideas; I mean, to prove their existence. He has employed a whole chapter to prove, that material things cannot be an immediate object of perception. His arguments are these: *1st*, They are without the mind, and therefore there can be no union between the object and the percipient. *2dly*, They are disproportioned to the mind, and removed from it by the whole diameter of being. *3dly*, Because, if material objects were immediate objects of perception, there could be no physical science; things necessary and immutable being the only objects of science. *4thly*, If material things were perceived by themselves, they would be a true light to our minds, as being the intelligible form of our understandings, and consequently perfective of them, and indeed superior to them.

MALEBRANCHE's system was adopted by many devout people in France of both sexes; but it seems to have had no great currency in other countries. Mr LOCKE wrote a small tract against it, which is found among his posthumous works: But whether it was written in haste, or after the vigour of his understanding was impaired by age, there is less of strength and solidity in it, than in most of his writings. The most formidable antagonist MALEBRANCHE met with was in his own country; ANTONY ARNAULD, doctor of the Sorbonne, and one of the acutest writers the Jansenists have to boast of, though that sect has produced many. Those who choose to see this system, attacked on the one hand, and defended on the other, with subtilty of argument, and elegance of expression, and on the part of ARNAULD with much wit and humour, may find satisfaction by reading MALEBRANCHE's Inquiry after Truth; ARNAULD's book of True and False Ideas; MALEBRANCHE's Defence; and some subsequent replies and defences. In controversies of this kind, the assailant commonly has the advantage, if they are not unequally matched; for it is easier to overturn all the theories of philosophers upon this subject, than to defend any one of them. Mr BAYLE makes a very just remark upon this controversy, that the arguments of Mr ARNAULD against the system of MALEBRANCHE were often unanswerable, but they were capable of being retorted against his own system; and his ingenious antagonist knew well how to use this defence.

CHAP. VIII.

Of the common Theory of Perception, and of the Sentiments of the PERIPATETICS, *and of* DES CARTES.

THIS theory in general is, that we perceive external objects only by certain images which are in our minds, or in the sensorium to which the mind is immediately present. Philosophers, in different ages, have differed both in the names they have given to those images, and in their notions concerning them. It would be a laborious task to enumerate all their variations, and perhaps would not requite the labour. I shall only give a sketch of the principal differences with regard to their names and their nature.

By ARISTOTLE and the Peripatetics, the images presented to our senses were called *sensible species or forms*; those presented to the memory or imagination were called *phantasms*; and those presented to the intellect were called *intelligible species*; and they thought, that there can be no perception, no imagination, no intellection, without species or phantasms. What the ancient philosophers called species, sensible and intelligible, and phantasms, in later times, and especially since the time of DES CARTES, came to be called by the common name of *ideas*. The Cartesians divided our ideas into three classes, those of *sensation*, of *imagination*, and of *pure intellection*. Of the objects of sensation and imagination, they thought the images are in the brain, but of objects that are incorporeal, the images are in the understanding, or pure intellect.

Mr LOCKE, taking the word *idea* in the same sense as DES CARTES had done before him, to signify whatever is meant by phantasm, notion, or species, divides ideas into those of *sensation*, and those of *reflection*; meaning by the first, the ideas of all corporeal objects, whether perceived, remembered, or imagined; by the second, the ideas of the powers and operations of our minds. What Mr LOCKE calls ideas, Mr HUME divides into two distinct kinds, *impressions* and *ideas*. The difference betwixt these, he says, consists in the degrees of force and liveliness with which they strike upon the mind. Under *impressions* he comprehends all our sensations, passions and emotions, as they make their first appearance in the soul. By *ideas* he means the faint images of these in thinking and reasoning.

Dr HARTLEY gives the same meaning to ideas as Mr HUME does, and what Mr HUME calls impressions, he calls sensations; conceiving our sensations to be occasioned by vibrations of the infinitesimal particles of the brain, and ideas by miniature vibrations, or vibratiuncles. Such differences we find among philosophers, with regard to the name of those internal images of objects of sense, which they hold to be the immediate objects of perception.

We shall next give a short detail of the sentiments of the Peripatetics and Cartesians, of LOCKE, BERKELEY, and HUME, concerning them.

ARISTOTLE seems to have thought that the soul consists of two parts, or, rather, that we have two souls, the animal and the rational; or, as he calls them, the soul and the intellect. To the *first*, belong the senses, memory, and imagination; to the *last*, judgment opinion, belief, and reasoning. The first we have in common with brute animals; the last is peculiar to man. The animal soul he held to be a certain form of the body, which is inseparable from it, and perishes at death. To this soul the senses belong: And he defines a sense to be that which is capable of receiving the sensible forms, or species of objects, without any of the matter of them; as wax receives the form of the seal without any of the matter of it. The forms of sound, of colour, of taste, and of other sensible qualities, are in like manner received by the senses.

It seems to be a necessary consequence of ARISTOTLE's doctrine, that bodies are constantly sending forth, in all directions, as many different kinds of forms without matter as they have different sensible qualities; for the forms of colour must enter by the eye, the forms of sound by the ear, and so of the other senses. This accordingly was maintained by the followers of ARISTOTLE, though, not, as far as I know, expressly mentioned by himself. They disputed concerning the nature of those forms, or species, whether they were real beings or non-entities; and some held them to be of an intermediate nature between the two. The whole doctrine of the Peripatetics and schoolmen concerning forms, substantial and accidental, and concerning the transmission of sensible species from objects of sense to the mind, if it be at all intelligible, is so far above my comprehension, that I should perhaps do it injustice, by entering into it more minutely. MALEBRANCHE, in his *Recherche de la Verité*, has employed a chapter to shew, that material objects do not send forth sensible species of their several sensible qualities.

The great revolution which DES CARTES produced in philosophy, was the effect of a superiority of genius, aided by the circumstances of the times. Men had, for more than a thousand years, looked up to ARISTOTLE as an oracle in philosophy. His authority was the test of truth. The small remains of the Platonic system were confined to a few Mystics, whose principles and manner of life drew little attention. The feeble attempts of RAMUS, and of some others, to make improvements in the system, had little effect. The Peripatetic doctrines were so interwoven with the whole system of scholastic theology, that to dissent from ARISTOTLE was to alarm the Church. The most useful and intelligible parts, even of ARISTOTLE'S writings were neglected, and philosophy was become an art of speaking learnedly, and disputing subtilely, without producing any invention of use in human life. It was fruitful of words, but barren of works, and admirably contrived for drawing a veil over human ignorance, and putting a stop to the progress of knowledge, by filling men with a conceit that they knew every thing. It was very fruitful also in controversies; but for the most part they were controversies about words, or about things of no moment, or things above the reach of the human faculties: And the issue of them was what might be expected, that the contending parties fought, without gaining or losing an inch of ground, till they were weary of the dispute, or their attention was called off to some other subject.

Such was the philosophy of the schools of Europe, during many ages of darkness and barbarism that succeeded the decline of the Roman empire; so that there was great need of a reformation in philosophy as well as in religion. The light began to dawn at last; a spirit of inquiry sprang up, and men got the courage to doubt of the dogmas of ARISTOTLE, as well as of the decrees of Popes. The most important step in the reformation of religion was to destroy the claim of infallibility, which hindered men from using their judgment in matters of religion: And the most important step in the reformation of philosophy was to destroy the authority, of which ARISTOTLE had so long had peaceable possession, The last had been attempted by Lord BACON and others, with no less zeal than the first by LUTHER and CALVIN.

DES CARTES knew well the defects of the prevailing system, which had begun to lose its authority. His genius enabled him, and his spirit prompted him, to attempt a new one. He had applied much to the mathematical sciences, and had made considerable improvement in them. He wished to introduce that perspicuity and evidence into other branches of philosophy which he found in them.

Being sensible how apt we are to be led astray by prejudices of education, he thought the only way to avoid error, was, to resolve to doubt of every thing, and hold every thing to be uncertain; even those things which he had been taught to hold as most certain, until he had such clear and cogent evidence as compelled his assent.

In this state of universal doubt, that which first appeared to him to be clear and certain, was his own existence. Of this he was certain, because he was conscious that he thought, that he reasoned, and that he doubted. He used this argument, therefore, to prove his own existence, *Cogito, ergo sum.* This he conceived to be the first of all truths, the foundation-stone upon which the whole fabric of human knowledge is built, and on which it must rest. And as ARCHIMEDES thought, that if he had one fixed point to rest his engines upon, he could move the earth; so DES CARTES, charmed with the discovery of one certain principle, by which he emerged from the state of universal doubt, believed that this principle alone would be a sufficient foundation on which he might build the whole system of science. He seems therefore to have taken no great trouble to examine whether there might not be other first principles, which, on account of their own light and evidence, ought to be admitted by every man of sound judgment. The love of simplicity, so natural to the mind of man, led him to apply the whole force of his mind to raise the fabric of knowledge upon this one principle, rather than seek a broader foundation.

Accordingly, he does not admit the evidence of sense to be a first principle, as he does that of consciousness. The arguments of the ancient sceptics here occurred to him; that our senses often deceive us, and therefore ought never to be trusted on their own authority; that, in sleep, we often seem to see and hear things which we are convinced to have had no existence. But that which chiefly led DES CARTES to think that he ought not to trust to his senses without proof of their veracity, was, that he took it for granted, as all philosophers had done before him, that he did not perceive external objects themselves, but certain images of them in his own mind, called *ideas*. He was certain by consciousness, that he had the ideas of sun and moon, earth and sea; but how could he be assured that there really existed external objects like to these ideas?

Hitherto he was uncertain of every thing but of his own existence, and the existence of the operations and ideas of his own mind. Some of his disciples, it is said, remained at this stage of his system, and got the name of Egoists. They could not find evidence in the subsequent stages of his progress. But DES CARTES resolved not to stop here; he endeavoured to prove, by a new argument, drawn from his idea of a Deity, the existence of an infinitely perfect Being, who made him, and all his faculties. From the perfection of this Being, he inferred that he could be no deceiver; and therefore concluded, that his senses, and the other faculties he found in himself, are not fallacious, but may be trusted, when a proper use is made of them.

The system of DES CARTES is, with great perspicuity and acuteness, explained by himself in his writings, which ought to be consulted by those who would understand it.

The merit of DES CARTES cannot be easily conceived by those who have not some notion of the Peripatetic system, in which he was educated. To throw off the prejudices of education, and to create a system of nature, totally different from that which had subdued the understanding of mankind, and kept it in subjection for so many centuries, required an uncommon force of mind.

The world which DES CARTES exhibits to our view, is not only in its structure very different from that of the Peripatetics, but is, as we may say, composed of different materials.

In the old system, every thing was, by a kind of metaphysical sublimation, resolved into principles so mysterious, that it may be a question, whether they were words without meaning, or were notions too refined for human understanding.

All that we observe in nature, is, according to ARISTOTLE, a constant succession of the operations of generation and corruption. The principles of generation, are matter and form; the principle of corruption is privation. All natural things are produced or generated by the union of matter and form; matter being, as it were, the mother, and form the father. As to matter, or the first matter, as it is called, it is neither substance nor accident; it has no quality nor property; it is nothing actually, but every thing potentially. It has so strong an appetite for form, that it is no sooner divested of one form, than it is clothed with another, and is equally susceptible of all forms successively. It has no nature, but only the capacity of having any one.

This is the account which the Peripatetics give of the first matter. The other principle of generation is *form*, *act*, *perfection*; for these three words signify the same thing. But we must not conceive form to consist in the figure, size, arrangement, or motion, of the parts of matter. These, indeed, are accidental forms, by which things artificial are formed: But every production of nature has a substantial form, which, joined to matter, makes it to be what it is. The substantial form is a kind of informing soul, which gives the thing its specific nature, and all its qualities, powers, and activity. Thus the substantial form of heavy bodies, is that which makes them descend; of light bodies, that which makes them ascend. The substantial form of gold, is that which gives it its ductility, its fusibility, its weight, its colour, and all its qualities; and the same is to be understood of every natural production. A change in the accidental form of any body, is alteration only; but a change in the substantial form, is generation and corruption: It is corruption, with respect to the substantial form of which the body is deprived: It is generation with respect to the substantial form that succeeds. Thus, when a horse dies, and turns to dust, the philosophical account of the phænomenon is this: A certain portion of the *materia prima*, which was joined to the substantial form of a horse, is deprived of it by privation, and in the same instant, is invested with the substantial form of earth. As every substance must have a substantial form, there are some of those forms inanimate, some vegetative, some animal, and some rational. The three former kinds can only subsist in matter; but the last, according to the schoolmen, is immediately created by GOD, and infused into the body, making one substance with it, while they are united; yet capable of being disjoined from the body, and of subsisting by itself.

Such are the principles of natural things in the Peripatetic system. It retains so much of the ancient Pythagorean doctrine, that we cannot ascribe the invention of it solely to ARISTOTLE; although he, no doubt, made considerable alterations in it. The first matter was probably the same in both systems, and was in both held to be eternal. They differed more about form. The Pythagoreans and Platonists held forms, or ideas, as they called them, to be eternal, immutable, and self-existent. ARISTOTLE maintained, that they were not eternal, nor self-existent. On the other hand, he did not allow them to be produced, but educed from matter; yet he held them not to be actually in the matter from which they are educed, but potentially only. But these two systems differed less from one another, than that of DES CARTES did from both.

In the world of DES CARTES, we meet with two kinds of beings only, to wit, body and mind; the first, the object of our senses, the other of consciousness; both of them things of which we have a distinct apprehension, if the human mind be capable of distinct apprehension at all. To the first, no qualities are ascribed but extension, figure, and motion; to the last, nothing but thought, and its various modifications, of which we are conscious. He could observe no common attribute, no resembling feature in the attributes of body and mind, and therefore concluded them to be distinct substances, and totally of a different nature; and that body, from its very nature, is inanimate and inert, incapable of any kind of thought or sensation, or of producing any change or alteration in itself.

DES CARTES must be allowed the honour of being the first who drew a distinct line between the material and intellectual world, which, in all the old systems, were so blended together, that it was impossible to say where the one ends, and the other begins. How much this distinction hath contributed to the improvements of modern times, in the philosophy both of body and of mind, is not easy to say.

One obvious consequence of this distinction, was, that accurate reflection on the operations of our own mind, is the only way to make any progress in the knowledge of it. MALEBRANCHE, LOCKE, BERKELEY, and HUME, were taught this lesson by DES CARTES; and to it we owe their most valuable discoveries in this branch of philosophy. The analogical way of reasoning concerning the powers of the mind from the properties of body, which is the source of almost all the errors on this subject, and which is so natural to the bulk of mankind, was as contrary to the principles of DES CARTES, as it was agreeable to the principles of the old philosophy. We may, therefore, truly say, that in that part of philosophy which relates to the mind, DES CARTES laid the foundation, and put us into that track, which all wise men now acknowledge to be the only one in which we can expect success.

With regard to physics, or the philosophy of body, if DES CARTES had not the merit of leading men into the right track, we must allow him that of bringing them out of a wrong one. The Peripatetics, by assigning to every species of body a particular substantial form, which produces, in an unknown manner, all the effects we observe in it, put a stop to all improvement in this branch of philosophy. Gravity and levity, fluidity and hardness, heat and cold, were qualities arising from the substantial form of the bodies to which they belonged. Generation and corruption, substantial forms, and occult qualities, were always at hand, to resolve every phænomenon. This philosophy, therefore, instead of accounting for any of the phænomena of nature, contrived only to give learned names to their unknown causes, and fed men with the husks of barbarous terms, instead of the fruit of real knowledge.

By the spreading of the Cartesian system, *materia prima*, substantial forms, and occult qualities, with all the jargon of the Aristotelian physics, fell into utter disgrace, and were never mentioned by the followers of the new system, but as a subject of ridicule. Men became sensible, that their understanding had been hood-winked by those hard terms. They were now accustomed to explain the phænomena of nature, by the figure, size, and motion of the particles of matter, things perfectly level to human understanding, and could relish nothing in philosophy that was dark and unintelligible. ARISTOTLE, after a reign of more than a thousand years, was now exposed as an object of derision even to the vulgar, arrayed in the mock majesty of his substantial forms and occult qualities. The ladies became fond of a philosophy which was easily learned, and required no words too harsh for their delicate organs. Queens and princesses, the most distinguished personages of the age, courted the conversation of DES CARTES, and became adepts in his philosophy. Witness CHRISTINA, Queen of Sweden, and ELISABETH, daughter of FREDERICK, king of Bohemia, and sister to SOPHIA, the mother of our Royal Family. The last, though very young, when DES CARTES wrote his *Principia*, he declares to be the only person he knew, who perfectly understood, not only all his philosophical writings but the most abstruse of his mathematical works.

That men should rush with violence from one extreme, without going more or less into the contrary extreme, is not to be expected from the weakness of human nature. DES CARTES and his followers were not exempted from this weakness; they thought that extension, figure, and motion, were sufficient to resolve all the phænomena of the material system. To admit other qualities, whose cause is unknown, was to return to Egypt, from which they had been so happily delivered.

When Sir ISAAC NEWTON's doctrine of gravitation was published, the great objection to it, which hindered its general reception in Europe for half a century, was, that gravitation seemed to be an occult quality, as it could not be accounted for by extension, figure, and motion, the known attributes of body. They who defended him, found it difficult to answer this objection, to the satisfaction of those who had been initiated in the principles of the Cartesian system. But, by degrees, men came to be sensible, that, in revolting from ARISTOTLE, the Cartesians had gone into the opposite extreme; experience convinced them, that there are qualities in the material world, whose existence is certain, though their cause be occult. To acknowledge this, is only a candid confession of human ignorance, than which there is nothing more becoming a philosopher.

As all that we can know of the mind must be derived from a careful observation of its operations in ourselves; so all that we can know of the material system must be derived from what can be discovered by our senses. DES CARTES was not ignorant of this; nor was his system so unfriendly to observation and experiment as the old system was. He made many expeiments, and called earnestly upon all lovers of truth to aid him in this way. But, believing that all the phænomena of the material world are the result of extension, figure, and motion, and that the Deity always combines these, so as to produce the phænomena in the simplest manner possible, he thought, that, from a few experiments, he might be able to discover the simplest way, in which the obvious phænomena of nature can be produced by matter and motion only; and hat this must be the way in which they are actually produced. His conjectures were ingenious, upon the principles he had adopted. But they are found to be so far from the truth, that they ought for ever to discourage philosophers from trusting to conjecture in the operations of nature.

The vortices or whirlpools of subtile matter, by which DES CARTES endeavoured to account for the phænomena of the material world, are now found to be fictions, no less than the sensible species of ARISTOTLE.

It was reserved for Sir ISAAC NEWTON to point out clearly the road to the knowledge of Nature's works. Taught by LORD BACON to despise hypotheses as the fictions of human fancy, he laid it down as a rule of philosophising, that no causes of natural things ought to be assigned but such as can be proved to have a real existence. He saw, that all the length men can go in accounting for phænomena, is to discover the laws of Nature, according to which they are produced; and therefore, that the true method of philosophising is this: From real facts ascertained by observation and experiment, to collect by just induction the laws of nature, and to apply the laws so discovered, to account for the phænomena of Nature.

Thus the natural philosopher has the rules of his art fixed with no less precision than the mathematician, and may be no less certain when he keeps within them and when he deviates from them: And though the evidence of a law of nature from induction is not demonstrative, it is the only kind of evidence on which all the most important affairs of human life must rest.

Pursuing this road without deviation, NEWTON discovered the laws of our planetary system, and of the rays of light; and gave the first and the noblest examples of that chaste induction, which Lord BACON could only delineate in theory.

How strange is it, that the human mind should have wandered for so many ages, without falling into this track! How much more strange, that after it has been clearly discovered, and a happy progress made in it, many choose rather to wander in the fairy regions of hypothesis!

To return to DES CARTES's notions of the manner of our perceiving external objects, from which a concern to do justice to the merits of that great reformer in philosophy has led me to degress, he took it for granted, as the old philosophers had done, that what we immediately perceive must be either in the mind itself, or in the brain, to which the mind is immediately present. The impressions made upon our organs, nerves, and brain, could be nothing, according to his philosophy, but various modifications of extension, figure, and motion. There could be nothing in the brain like sound or colour, taste or smell, heat or cold; these are sensations in the mind, which, by the laws of the union of soul and body, are raised on occasion of certain traces in the brain; and although he gives the name of ideas to those traces in the brain, he does not think it necessary that they should be perfectly like to the things which they represent, any more than that words or signs should resemble the things they signify. But, says he, that we may follow the received opinion as far as is possible, we may allow a slight resemblance. Thus we know, that a print in a book may represent houses, temples, and groves; and so far is it from being necessary that the print should be perfectly like the thing it represents, that its perfection often requires the contrary: For a circle must often be represented by an ellipse, a square by a rhombus, and so of other things.

The perceptions of sense, he thought, are to be referred solely to the union of soul and body. They commonly exhibit to us only what may hurt or profit our bodies; and rarely, and by accident only, exhibit things as they are in themselves. It is by observing this, that we must learn to throw off the prejudices of sense, and to attend with our intellect to the ideas which are by nature implanted in it. By this means we shall understand, that the nature of matter does not consist in those things that affect our senses, such as colour, or smell, or taste; but only in this, that it is something extended in length, breadth, and depth.

The writings of DES CARTES have in general a remarkable degree of perspicuity; and he undoubtedly intended that, in this particular, his philosophy should be a perfect contrast to that of ARISTOTLE; yet, in what he has said in different parts of his writings, of our perception of external objects, there seems to be some obscurity, and even inconsistency; whether owing to his having had different opinions on the subject at different times, or to the difficulty he found in it, I will not pretend to say.

There are two points in particular, wherein I cannot reconcile him to himself: The *first*, regarding the place of the ideas or images of external objects, which are the immediate objects of perception; the *second*, with regard to the veracity of our external senses.

As to the *first*, he sometimes places the ideas of material objects in the brain, not only when they are perceived, but when they are remembered or imagined; and this has always been held to be the Cartesian doctrine; yet he sometimes says, that we are not to conceive the images or traces in the brain to be perceived as if there were eyes in the brain; these traces are only occasions on which, by the laws of the union of soul and body, ideas are excited in the mind; and therefore it is not necessary that there should be an exact resemblance between the traces and the things represented by them, any more than that words or signs should be exactly like the things signified by them.

These two opinions, I think, cannot be reconciled. For, *if the images or traces in the brain are perceived, they must be the objects of perception, and not the occasions of it only.* On the other hand, if they are only the occasions of our perceiving, they are not perceived at all. DES CARTES seems to have hesitated between the two opinions, or to have passed from the one to the other. Mr LOCKE seems, in like manner, to have wavered between the two; sometimes representing the ideas of material things as being in the brain, but more frequently as in the mind itself. Neither DES CARTES nor Mr LOCKE could, consistently with themselves, attribute any other qualities to images in the brain, but extension, figure, and motion; for as to those qualities which Mr LOCKE distinguished by the name of secondary qualities, both philosophers believed them not to belong to body at all, and therefore could not ascribe them to images in the brain.

Sir ISAAC NEWTON and Dr SAMUEL CLARKE, uniformly speak of the species or images of material things as being in that part of the brain called the *sensorium*, and perceived by the mind there present; but the former speaks of this point only incidentally, and with his usual modesty, in the form of a query. MALEBRANCHE is perfectly clear and unambiguous in this matter. According to his system, the images or traces in the brain are not perceived at all; they are only occasions upon which, by the laws of nature, certain sensations are felt by us, and certain of the divine ideas discovered to our minds.

The *second* point on which DES CARTES seems to waver, is with regard to the credit that is due to the testimony of our senses.

Sometimes, from the perfection of the Deity, and his being no deceiver, he infers, that our senses and our other faculties cannot be fallacious: And since we seem clearly to perceive, that the idea of matter comes to us from things external, which it perfectly resembles, therefore, we must conclude, that there really exists something extended in length, breadth, and depth, having all the properties which we clearly perceive to belong to an extended thing.

At other times, we find DES CARTES and his followers making frequent complaints, as all the ancient philosophers did, of the fallacies of sense. He warns us to throw off its prejudices, and to attend only, with our intellect, to the ideas implanted there. By this means we may perceive, that the nature of matter does not consist in hardness, colour, weight, or any of those things that affect our senses, but in this only, that it is something extended in length, breadth, and depth. The senses, he says, are only relative to our present state; they exhibit things only, as they tend to profit or to hurt us, and rarely, and by accident only, as they are in themselves.

It was probably owing to an aversion to admit any thing into philosophy, of which we have not a clear and distinct conception, that DES CARTES was led to deny, that there is any substance of matter, distinct from those qualities of it which we perceive. We say, that matter is something extended, figured, moveable. Extension, figure, mobility, therefore, are not matter, but qualities, belonging to this something, which we call *matter*. DES CARTES could not relish this obscure *something*, which is supposed to be the subject or *substratum* of those qualities; and therefore maintained that extension is the very essence of matter. But, as we must ascribe extension to space as well as to matter, he found himself under a necessity of holding, that space and matter are the same thing, and differ only in our way of conceiving them; so that, wherever there is space there is matter, and no void left in the universe. The necessary consequence of this is, that the material world has no bounds nor limits. He did not, however, choose to call it infinite, but indefinite.

It was probably owing to the same cause that DES CARTES made the essence of the soul to consist in thought: He would not allow it to be an unknown something that has the power of thinking; it cannot therefore be without thought: And as he conceived there can be no thought without ideas, the soul must have had ideas in its first formation, which, of consequence, are innate.

The sentiments of those who come after DES CARTES, with regard to the nature of body and mind, have been various. Many have maintained, that body is only a collection of qualities to which we give one name; and that the notion of a subject of inhesion, to which those qualities belong, is only a fiction of the mind. Some have even maintained, that the soul is only a succession of related ideas, without any subject of inhesion. It appears, by what has been said, how far these notions are allied to the Cartesian system.

The triumph of the Cartesian system over that of ARISTOTLE, is one of the most remarkable revolutions in the history of philosophy, and has led me to dwell longer upon it than the present subject perhaps required. The authority of ARISTOTLE was now no more. That reverence for hard words and dark notions, by which mens understanding had been strangled in early years, was turned into contempt, and every thing suspected which was not clearly and distinctly understood. This is the spirit of the Cartesian philosophy, and is a more important acquisition to mankind than any of its particular tenets; and for exerting this spirit so zealously, and spreading it so successfully, DES CARTES deserves immortal honour.

It is to be observed, however, that DES CARTES rejected a part only of the ancient theory, concerning the perception of external objects by the senses, and that he adopted the other part. That theory may be divided into two parts: The *first*, That images, species, or forms of external objects, come from the object, and enter by the avenues of the senses to the mind; the *second* part is, That the external object itself is not perceived, but only the species or image of it in the mind. The first part DES CARTES and his followers rejected, and refuted by solid arguments; but the second part neither he nor his followers have thought of calling in question; being persuaded that it is only a representative image, in the mind, of the external object that we perceive, and not the object itself. And this image, which the Peripatetics called a species, he calls an idea, changing the name only, while he admits the thing.

It seems strange, that the great pains which this philosopher took to throw off the prejudices of education, to dismiss all his former opinions, and to assent to nothing, till he found evidence that compelled his assent, should not have led him to doubt of this opinion of the ancient philosophy. It is evidently a philosophical opinion; for the vulgar undoubtedly believe that it is the external object which we immediately perceive, and not a representative image of it only. It is for this reason that they look upon it as a perfect lunacy to call in question the existence of external objects.

It seems to be admitted as a first principle by the learned and the unlearned, that what is really perceived must exist, and that to perceive what does not exist is impossible. So far the unlearned man and the philosopher agree. The unlearned man says, I perceive the external object, and I perceive it to exist. Nothing can be more absurd than to doubt of it. The Peripatetic says, What I perceive is the very identical form of the object, which came immediately from the object, and makes an impression upon my mind, as a seal does upon wax; and therefore I can have no doubt of the existence of an object whose form I perceive. But what says the Cartesian? I perceive not, says he, the external object itself. So far he agrees with the Peripatetic, and differs from the unlearned man. But I perceive an image, or form, or idea, in my own mind, or in my brain. I am certain of the existence of the idea, because I immediately perceive it. But how this idea is formed, or what it represents, is not self-evident; and therefore I must find arguments, by which, from the existence of the idea which I perceive, I can infer the existence of an external object which it represents.

As I take this to be a just view of the principles of the unlearned man, of the Peripatetic, and of the Cartesian, so I think they all reason consequently from their several principles; that the Cartesian has strong grounds to doubt of the existence of external objects; the Peripatetic very little ground of doubt; and the unlearned man none at all: And that the difference of their situation arises from this, that the unlearned man has no hypothesis; the Peripatetic leans upon an hypothesis; and the Cartesian upon one half of that hypothesis.

DES CARTES, according to the spirit of his own philosophy, ought to have doubted of both parts of the Peripatetic hypothesis, or to have given his reasons why he adopted one part, as well as why he rejected the other part; especially since the unlearned, who have the faculty of perceiving objects by their senses in no less perfection than philosophers, and should therefore know as well as they what it is they perceive, have been unanimous in this, that the objects they perceive are not ideas in their own minds, but things external. It might have been expected, that a philosopher who was so cautious as not to take his own existence for granted without proof, would not have taken it for granted, without proof, that every thing he perceived was only ideas in his own mind.

But if DES CARTES made a rash step in this, as I apprehend he did, he ought not to bear the blame alone. His successors have still continued in the same track, and, after his example, have adopted one part of the ancient theory, to wit, that the objects we immediately perceive are ideas only. All their systems are built on this foundation.

CHAP. IX.

Of the Sentiments of Mr. LOCKE.

THE reputation which LOCKE's Essay on Human Understanding had at home from the beginning, and which it has gradually acquired abroad, is a sufficient testimony of its merit. There is perhaps no book of the metaphysical kind that has been so generally read by those who understand the language, or that is more adapted to teach men to think with precision, and to inspire them with that candour and love of truth, which is the genuine spirit of philosophy. He gave, I believe, the first example in the English language of writing on such abstract subjects, with a remarkable degree of simplicity and perspicuity; and in this he has been happily imitated by others that came after him. No author hath more successfully pointed out the danger of ambiguous words, and the importance of having distinct and determinate notions in judging and reasoning. His observations on the various powers of the human understanding, on the use and abuse of words, and on the extent and limits of human knowledge, are drawn from attentive reflection on the operations of his own mind, the true source of all real knowledge on these subjects; and shew an uncommon degree of penetration and judgment: But he needs no panegyric of mine; and I mention these things, only that when I have occasion to differ from him, I may not be thought insensible of the merit of an author whom I highly respect, and to whom I owe my first lights in those studies, as well as my attachment to them.

He sets out in his Essay with a full conviction, common to him with other philosophers, that ideas in the mind are the objects of all our thoughts in every operation of the understanding. This leads him to use the word *idea* so very frequently, beyond what was usual in the English language, that he thought it necessary in his introduction to make this apology: "It being that term, says he, which, I think, serves "best to stand for whatsoever is the object of under-"standing, when a man thinks; I have used it to ex-"press whatever is meant by phantasm, notion, spe-

"cies, or whatever it is which the mind can be em-"ployed about in thinking; and I could not avoid "frequently using it. I presume it will be granted "me, that there are such ideas in mens minds; every "man is conscious of them in himself; and mens "words and actions will satisfy him that they are in "others."

Speaking of the reality of our knowledge, he says, "It is evident the mind knows not things immediate-"ly, but only by the intervention of the ideas it has "of them: Our knowledge therefore is real, only so "far as there is a conformity between our ideas and "the reality of things. But what shall be here the "criterion? How shall the mind, when it perceives "nothing but its own ideas, know that they agree "with things themselves? This, though it seems not "to want difficulty, yet I think there be two sorts of "ideas that we may be assured agree with things."

We see that Mr Locke was aware no less than Des Cartes, that the doctrine of ideas made it necessary, and at the same time difficult, to prove the existence of a material world without us; because the mind, according to that doctrine, perceives nothing but a world of ideas in itself. Not only Des Cartes, but Malebranche, Arnauld, and Norris, had perceived this difficulty, and attempted to remove it with little success. Mr Locke attempts the same thing; but his arguments are feeble. He even seems to be conscious of this: For he concludes his reasoning with this observation, "That we have evidence sufficient to direct "us in attaining the good and avoiding the evil, "caused by external objects, and that this is the im-"portant concern we have in being made acquainted "them." This indeed is saying no more than will be granted by those who deny the existence of a material world.

As there is no material difference between LOCKE and DES CARTES with regard to the perception of objects by the senses, there is the less occasion, in this place, to take notice of all their differences in other points. They differed about the origin of our ideas. DES CARTES thought some of them were innate: The other maintained, that there are no innate ideas, and that they are all derived from two sources, to wit, *sensation* and *reflection;* meaning by sensation, the operations of our external senses; and by reflection, that attention which we are capable of giving to the operations of our own minds.

They differed with regard to the essence both of matter and of mind: The British philosopher holding that the real essence of both is beyond the reach of human knowledge; the other conceiving, that the very essence of mind consists in thought; and that of matter in extension; by which he made matter and space not to differ in reality, and no part of space to be void of matter.

MR LOCKE explained more distinctly than had been done before, the operations of the mind in classing the various objects of thought, and reducing them to genera and species. He was the first, I think, who distinguished in substances what he calls the nominal essence, which is only the notion we form of a genus or species, and which we express by a definition, from the real essence or internal constitution of the thing, which makes it to be what it is. Without this distinction, the subtile disputes which tortured the schoolmen for so many ages, in the controversy between the nominalists and realists, could never be brought to an issue. He shews distinctly how we form abstract and general notions, and the use and necessity of them in reasoning. And as (according to the received principles of philosophers) every notion of our mind must have for its object an idea in the mind itself; he thinks that we form abstract ideas by leaving out of the idea of an individual every thing wherein it differs from other individuals of the same species or genus; and that this power of forming abstract ideas is that which chiefly distinguishes us from brute animals, in whom he could see no evidence of any abstract ideas.

Since the time of DES CARTES, philosophers have differed much with regard to the share they ascribe to the mind itself, in the fabrication of those representative beings called *ideas*, and the manner in which this work is carried on.

Of the authors I have met with, Dr ROBERT HOOK is the most explicit. He was one of the most ingenious and active members of the Royal Society of London at its first institution; and frequently read lectures to the Society, which were published among his posthumous works. In his lectures upon Light, sect. 7. he makes ideas to be material substances, and thinks that the brain is furnished with a proper kind of matter for fabricating the ideas of each sense. The ideas of sight, he thinks, are formed of a kind of matter resembling the Bononian stone, or some kind of phosphorus; that the ideas of sound are formed of some matter resembling the chords or glasses which take a sound from the vibrations of the air; and so of the rest.

The soul, he thinks, may fabricate some hundreds of those ideas in a day; and that as they are formed they are pushed farther off from the centre of the brain where the soul resides. By this means they make a continued chain of ideas, coyled up in the brain, the first end of which is farthest removed from the centre or seat of the soul; and the other end is always at the centre, being the last idea formed, which is always the present moment when considered; and therefore, according as there is a greater number of ideas between the present sensation or thought in the centre and any other, the soul is apprehensive of a larger portion of time interposed.

Mr LOCKE has not entered into so minute a detail of this manufacture of ideas; but he ascribes to the mind a very considerable hand in forming its own ideas. With regard to our sensations, the mind is passive, "they being produced in us, only by different "degrees and modes of motion in our animal spirits, "variously agitated by external object:" These, however, cease to be, as soon as they cease to be perceived; "but, by the faculties of memory and imagination, the mind has an ability, when it wills, to revive them again, and, as it were, to paint them anew "upon itself, though some with more, some with less "difficulty."

As to the ideas of reflection, he ascribes them to no other cause but to that attention which the mind is capable of giving to its own operations: These, therefore, are formed by the mind itself. He ascribes likewise to the mind the power of compounding its simple ideas into complex ones of various forms; of repeating them, and adding the repetitions together; of dividing and classing them; of comparing them, and, from that comparison, of forming the ideas of their relation; nay, of forming a general idea of a species or genus, by taking from the idea of an individual every thing by which it is distinguished from other individuals of the kind, till at last it becomes an abstract general idea, common to all the individuals of the kind.

These, I think, are the powers which Mr LOCKE ascribes to the mind itself in the fabrication of its ideas. Bishop BERKELEY, as we shall see afterwards, abridged them considerably, and Mr HUME much more.

The ideas we have of the various qualities of bodies are not all, as Mr LOCKE thinks, of the same kind. Some of them are images or resemblances of what is really in the body; others are not. There are certain qualities inseparable from matter; such as extension, solidity, figure, mobility. Our ideas of these are real resemblances of the qualities in the body; and these he calls primary qualities: But colour, sound, taste, smell, heat, and cold, he calls secondary qualities, and thinks that they are only powers in bodies of producing certain sensations in us; which sensations have nothing resembling them, though they are commonly thought to be exact resemblances of something in the body. "Thus, says he, the idea of "heat or light, which we receive by our eye or touch "from the sun, are commonly thought real qualities "existing in the sun, and something more than mere "powers in it."

The names of primary and secondary qualities, were, I believe, first used by Mr LOCKE; but the distinction, which they express, was well understood by DES CARTES, and is explained by him in his *Principia*, part 1. sect. 69, 70, 71.

Although no author has more merit than Mr LOCKE in pointing out the ambiguity of words, and resolving by that means many knotty questions, which had tortured the wits of the schoolmen; yet, I apprehend he has been sometimes misled by the ambiguity of the word *idea*, which he uses so often almost in every page of his Essay.

In the explication given of this word, we took notice of two meanings given to it; a popular and a philosophical. In the popular meaning, to have an idea of any thing, signifies nothing more than to think of it.

Although the operations of the mind are most properly and naturally, and indeed most commonly in all vulgar languages, expressed by active verbs, there is another way of expressing them less common, but equally well understood. To think of a thing, and to have a thought of it; to believe a thing, and to have a belief of it; to see a thing, and have a sight of it; to conceive a thing, and to have a conception, notion, or idea of it, are phrases perfectly synonymous. In these phrases the thought means nothing but the act of thinking; the belief, the act of believing; and the conception, notion, or idea, the act of conceiving. To have a clear and distinct idea, is, in this sense, nothing else but to conceive the thing clearly and distinctly. When the word *idea* is taken in this popular sense, there can be no doubt of our having ideas in our minds. To think without ideas would be to think without thought, which is a manifest contradiction.

But there is another meaning of the word *idea* peculiar to philosophers, and grounded upon a philosophical theory, which the vulgar never think of. Philosophers, ancient and modern, have maintained, that the operations of the mind, like the tools of an artificer, can only be employed upon objects that are present in the mind, or in the brain, where the mind is supposed to reside. Therefore, objects that are distant, in time or place, must have a representative in the mind, or in the brain; some image or picture of them, which is the object that the mind contemplates. This representative image was, in the old philosophy, called a *species* or *phantasm*. Since the time of DES CARTES, it has more commonly been called an *idea*; and every thought is conceived to have an idea for its object. As this has been a common opinion among philosophers, as far back as we can trace philosophy, it is the less to be wondered at, that they should be apt to confound the operation of the mind in thinking, with the idea or object of thought, which is supposed to be its inseparable concomitant.

If we pay any regard to the common sense of mankind, thought and the object of thought are different things, and ought to be distinguished. It is true, thought cannot be without an object, for every man who thinks must think of something; but the object he thinks of is one thing, his thought of that object is another thing. They are distinguished in all languages even by the vulgar; and many things may be affirmed of thought, that is, of the operation of the mind in thinking, which cannot without error, and even absurdity, be affirmed of the object of that operation.

From this, I think it is evident, that if the word *idea* in a work where it occurs in every paragraph, be used without any intimation of the ambiguity of the word, sometimes to signify thought, or the operation of the mind in thinking, sometimes to signify those internal objects of thought which philosophers suppose, this must occasion confusion in the thoughts both of the author and of the readers. I take this to be the greatest blemish in the Essay on Human Understanding I apprehend this is the true source of several paradoxical opinions in that excellent work, which I shall have occasion to take notice of.

Here it is very natural to ask, Whether it was Mr LOCKE's opinion, that ideas are the only objects of thought? or, Whether it is not possible for men to think of things which are not ideas in the mind?

To this question it is not easy to give a direct answer. On the one hand, he says often, in distinct and studied expressions, that the term *idea* stands for whatever is the object of the understanding when a man thinks, or whatever it is which the mind can be employed about in thinking: That the mind perceives nothing but its own ideas: That all knowledge consists in the perception of the agreement or disagreement of our ideas: That we can have no knowledge further than we have ideas. These, and many other expressions of the like import, evidently imply, that every object of thought must be an idea, and can be nothing else.

On the other hand, I am persuaded that Mr LOCKE would have acknowledged, that we may think of ALEXANDER the Great, or of the planet Jupiter, and of numberless things, which he would have owned are not ideas in the mind, but objects which exist independent of the mind that thinks of them.

How shall we reconcile the two parts of this apparent contradiction? All I am able to say upon Mr LOCKE's principles to reconcile them, is this, That we cannot think of ALEXANDER, or of the planet Jupiter, unless we have in our minds an idea, that is, an image or picture of those objects. The idea of ALEXANDER is an image, or picture, or representation of that hero in my mind; and this idea is the immediate object of my thought when I think of ALEXANDER. That this was

LOCKE's opinion, and that it has been generally the opinion of philosophers, there can be no doubt.

But, instead of giving light to the question proposed, it seems to involve it in greater darkness.

When I think of ALEXANDER, I am told there is an image or idea of ALEXANDER in my mind, which is the immediate object of this thought. The necessary consequence of this seems to be, that there are two objects of this thought; the idea, which is in the mind, and the person represented by that idea; the first, the immediate object of the thought, the last, the object of the same thought, but not the immediate object. This is a hard saying; for it makes every thought of things external to have a double object. Every man is conscious of his thoughts, and yet, upon attentive reflection, he perceives no such duplicity in the object he thinks about. Sometimes men see objects double, but they always know when they do so: And I know of no philosopher who has expressly owned this duplicity in the object of thought, though it follows necessarily from maintaining, that, in the same thought, there is one object that is immediate and in the mind itself; and another object, which is not immediate, and which is not in the mind.

Besides this, it seems very hard, or rather impossible, to understand what is meant by an object of thought, that is not an immediate object of thought. A body in motion may move another that was at rest, by the medium of a third body that is interposed. This is easily understood; but we are unable to conceive any medium interposed between a mind and the thought of that mind; and, to think of any object by a medium, seems to be words without any meaning. There is a sense in which a thing may be said to be perceived by a medium. Thus, any kind of sign may be said to be the medium by which I perceive or understand the thing signified. The sign by custom, or compact, or perhaps by nature, introduces the thought of the thing signified. But here the thing signified, when it is introduced to the thought, is an object of thought no less immediate than the sign was before: And there are here two objects of thought, one succeeding another, which we have shewn is not the case with respect to an idea, and the object it represents.

I apprehend, therefore, that if philosophers will maintain, that ideas in the mind are the only immediate objects of thought, they will be forced to grant that they are the sole objects of thought, and that it is impossible for men to think of any thing else. Yet, surely Mr LOCKE believed that we can think of many things that are not ideas in the mind; but he seems not to have perceived, that the maintaining that ideas in the mind are the only immediate objects of thought, must necessarily draw this consequence along with it.

The consequence, however, was seen by Bishop BERKELEY and Mr HUME, who rather chose to admit the consequence than to give up the principle from which it follows.

Perhaps it was ufortunate for Mr LOCKE, that he used the word *idea* so very frequently, as to make it very difficult to give the attention necessary to put it always to the same meaning. And it appears evident, that, in many places, he means nothing more by it but the notion or conception we have of any object of thought; that is, the act of the mind, in conceiving it, and not the object conceived.

In explaining this word, he says, that he uses it for whatever is meant by phantasm, notion, species. Here are three synonymes to the word *idea*. The first and last are very proper to express the philosophical meaning of the word, being terms of art in the Peripatetic philosophy, and signifying images of external things in the mind, which, according to that philosophy, are objects of thought. But the word *notion* is a word in common language, whose meaning agrees exactly with the popular meaning of the word *idea*, but not with the philosophical.

When these two different meanings of the word *idea* are confounded in a studied explication of it, there is little reason to expect that they should be carefully distinguished in the frequent use of it. There are many passages in the Essay, in which, to make them intelligible, the word *idea* must be taken in one of those senses, and many others, in which it must be taken in the other. It seems probable, that the author, not attending to this ambiguity of the word, used it in the one sense or the other, as the subject-matter required; and the far greater part of his readers have done the same.

There is a third sense, in which he uses the word not unfrequently, to signify objects of thought that are not in the mind, but external. Of this he seems to be sensible, and somewhere makes an apology for it. When he affirms, as he does in innumerable places, that all human knowledge consists in the perception of the agreement or disagreement of our ideas, it is impossible to put a meaning upon this, consistent with his principles, unless he means by *ideas* every object of human thought, whether mediate or immediate; every thing, in a word, that can be signified by the subject, or by the predicate of a proposition.

Thus we see, that the word *idea* has three different meanings in the Essay; and the author seems to have tinctly, will express these operations distinctly, as their consciousness represents them to the mind: But philosophers think they ought to know, not only that there are such operations, but how they are performed; how they see, and hear, and remember, and imagine; and, having invented a theory to explain these operations, by ideas or images in the mind, they suit their expressions to their theory; and as a false comment throws a cloud upon the text, so a false theory darkens the phænomena which it attempts to explain.

We shall examine this theory afterwards. Here I would only observe, that if it is not true, it may be expected that it should lead ingenious men who adopt it to confound the operations of the mind with their objects, and with one another, even where the common language of the unlearned clearly distinguishes them. One that trusts to a false guide, is in greater danger of being led astray than he who trusts his own eyes, though he should be but indifferently acquainted with the road.

CHAP. X.

Of the Sentiments of Bishop BERKELEY.

GEORGE BERKELEY, afterwards Bishop of Cloyne, published his new Theory of Vision in 1709; his Treatise on the principles of Human Knowledge, in 1710; and his Dialogues between Hylas and Phylonous, in 1713; being then a fellow of Trinity College, Dublin. He is acknowledged universally to have great merit as an excellent writer, and a very acute and clear reasoner on the most abstract subjects, not to speak of his virtues as a man, which were very conspicuous: Yet the doctrine chiefly held forth in the treatises above mentioned, especially in the two last, has generally been thought so very absurd, that few can be brought to think that he either believed it himself, or that he seriously meant to persuade others of its truth.

He maintains, and thinks he has demonstrated, by a variety of arguments, grounded on principles of philosophy universally received, that there is no such thing as matter in the universe; that sun and moon, earth and sea, our own bodies, and those of our friends, are nothing but ideas in the minds of those who think of them, and that they have no existence when they are not the objects of thought; that all that is in the universe may be reduced to two categories, to wit, minds, and ideas in the mind.

But, however absurd this doctrine might appear to the unlearned, who consider the existence of the objects of sense as the most evident of all truths, and what no man in his senses can doubt; the philosophers, who had been accustomed to consider ideas as the immediate objects of all thought, had no title to view this doctrine of BERKELEY in so unfavourable a light.

They were taught by DES CARTES, and by all that came after him, that the existence of the objects of sense is not self-evident, but requires to be proved by arguments; and although DES CARTES, and many others, had laboured to find arguments for this purpose, there did not appear to be that force and clearness in them which might have been expected in a matter of such importance. Mr NORRIS had declared, that after all the arguments that had been offered, the existence of an external world is only probable, but by no means certain. MALEBRANCHE thought it rested upon the authority of revelation, and that the arguments drawn from reason were not perfectly conclusive. Others thought, that the argument from revelation was a mere sophism, because revelation comes to us by our senses, and must rest upon their authority.

Thus we see, that the new philosophy had been making gradual approaches towards BERKELEY's opinion; and, whatever others might do, the philosophers had no title to look upon it as absurd, or unworthy of a fair examination. Several authors attempted to answer his arguments, but with little success, and others acknowledged that they could neither answer them not assent to them. It is probable the Bishop made but few converts to his doctrine; but it is certain he made some; and that he himself continued, to the end of his life, firmly persuaded, not only of its truth, but of its great importance for the improvement of human knowledge, and especially for the defence of religion. Dial. Pref. "If the principles which I "here endeavour to propagate are admitted for true, "the consequences which I think evidently flow from "thence are, that atheism and scepticism will be utterly destroyed, many intricate points made plain, "great difficulties solved, several useless parts of science retrenched, speculation referred to practice, "and men reduced from paradoxes to common sense."

In the Theory of Vision, he goes no further than to assert, that the objects of sight are nothing but ideas in the mind, granting, or at least not denying, that there is a tangible world, which is really external, and which exists whether we perceive it or not. Whether the reason of this was, that his system had not, at that time, wholly opened to his own mind, or whether he thought it prudent to let it enter into the minds of his readers by degrees, I cannot say. I think he insinuates the last as the reason in the Principles of Human Knowledge.

The Theory of Vision, however, taken by itself, and without relation to the main branch of his system, contains very important discoveries, and marks of great genius. He distinguishes, more accurately than any that went before him, between the immediate objects of sight, and those of the other senses which are early associated with them. He shews, that distance, of itself, and immediately, is not seen; but that we learn to judge of it by certain sensations and perceptions which are connected with it. This is a very important observation; and, I believe, was first made by this author. It gives much new light to the operations of our senses, and serves to account for many phænomena in optics, of which the greatest adepts in that science had always either given a false account, or acknowledged that they could give none at all.

We may observe, by the way, that the ingenious author seems not to have attended to a distinction, by which his general assertion ought to have been limited. It is true, that the distance of an object from the eye is not immediately seen; but there is a certain kind of distance of one object from another, which we see immediately. The author acknowledges, that there is a visible extension, and visible figures, which are proper objects of sight; there must therefore be a visible distance. Astronomers call it angular distance; and although they measure it by the angle, which is made by two lines drawn from the eye to the two distant objects, yet it is immediately perceived by sight, even by those who never thought of that angle.

He led the way in shewing how we learn to perceive the distance of an object from the eye, though this speculation was carried further by others who came after him. He made the distinction between that extension and figure which we perceive by sight only, and that which we perceive by touch; calling the first, visible, the last, tangible extension and figure. He shewed likewise, that tangible extension, and not visible, is the object of geometry, although mathematicians commonly use visible diagrams in their demonstrations.

The notion of extension and figure which we get from sight only, and that which we get from touch, have been so constantly conjoined from our infancy in all the judgments we form of the objects of sense, that it required great abilities to distinguish them accurately, and to assign to each sense what truly belongs to it; "so difficult a thing it is," as BERKELEY, justly observes, "dissolve an union so early begun, and "confirmed by so long a habit." This point he has laboured, through the whole of the Essay on Vision, with that uncommon penetration and judgment which he possessed, and with as great success as could be expected in a first attempt upon so abstruse a subject.

He concludes this Essay, by shewing, in no less than seven sections, the notions which an intelligent being, endowed with sight, without the sense of touch, might form of the objects of sense. This speculation, to shallow thinkers, may appear to be egregious trifling. To Bishop BERKELEY it appeared in another light, and will do so to those who are capable of entering into it, and who know the importance of it, in solving many of the phænomena of vision. He seems, indeed, to have exerted more force of genius in this than in the main branch of his system.

In the new philosophy, the pillars by which the existence of a material world was supported were so feeble, that it did not require the force of a SAMSON to bring them down; and in this we have not so much reason to admire the strength of BERKELEY's genius, as his boldness in publishing to the world an opinion, which the unlearned would be apt to interpret as the sign of a crazy intellect. A man who was firmly persuaded of the doctrine universally received by philosophers concerning ideas, if he could but take courage to call in question the existence of a material world, would easily find unanswerable arguments in that doctrine. "Some truths there are," says BERKELEY, "so near and obvious to the mind, that a man "need only open his eyes to see them. Such," he adds, "I take this important one to be, that all the "choir of heaven, and furniture of the earth; in a "word, all those bodies which compose the mighty "frame of the world, have not any subsistence without "a mind." Princ. § 6.

The principle from which this important conclusion is obviously deduced, is laid down in the first sentence of his Principles of Knowledge as evident; and indeed it had always been acknowledged by philosophers. "It is evident," says he, "to any one "who takes a survey of the objects of human know"ledge, that they are either ideas actually imprinted "on the senses, or else such as are perceived, by at"tending to the passions and operations of the mind; "or, lastly, ideas formed by help of memory and ima"gination, either compounding, dividing, or barely "representing those originally perceived in the foresaid "ways."

This is the foundation on which the whole system rests. If this be true, then, indeed, the existence of a material world must be a dream that has imposed upon all mankind from the beginning of the world.

The foundation on which a fabric rests ought to be very solid, and well established; yet BERKELEY says nothing more for it than that it is evident. If he means that it is self-evident, this indeed might be a good reason for not offering any direct argument in proof of it. But I apprehend this cannot justly be said. Self-evident propositions are those which appear evident to every man of sound understanding who apprehends the meaning of them distinctly, and attends to them without prejudice. Can this be said of this proposition, that all the objects of our knowledge are ideas in our own minds? I believe, that, to any man uninstructed in philosophy, this proposition will appear very improbable, if not absurd. However scanty his knowledge may be, he considers the sun and moon, the earth, and sea, as objects of it: And it will be difficult to persuade him, that those objects of his knowledge are ideas in his own mind, and have no existence when he does not think of them. If I may presume to speak my own sentiments, I once believed this doctrine of ideas so firmly, as to embrace the whole of BERKELEY's system in consequence of it; till, finding other consequences to follow from it, which gave me more uneasiness than the want of a material world, it came into my mind more than forty years ago, to put the question, What evidence have I for this doctrine, that all the objects of my knowledge are ideas in my own mind? From that time to the present I have been candidly and impartially, as I think, seeking for the evidence of this principle, but can find none, excepting the authority of philosophers.

We shall have occasion to examine its evidence afterwards. I would at present only observe, that all the arguments brought by BERKELEY against the existence of a material world are grounded upon it; and that he has not attempted to give any evidence for it, but takes it for granted, as other philosophers had done before him.

But supposing this principle to be true, BERKELEY's system is impregnable. No demonstration can be more evident than his reasoning from it. Whatever is perceived is an idea, and an idea can only exist in a mind. It has no existence when it is not perceived; nor can there be any thing like an idea, but an idea.

So sensible he was, that it required no laborious reasoning to deduce his system from the principle laid down, that he was afraid of being thought needlessly prolix in handling the subject, and makes an apology for it. Princ. § 22. "To what purpose is it," says he, "to dilate upon that which may be demon-
"strated with the utmost evidence, in a line or two, to
"any one who is capable of the least reflection." But though his demonstration might have been comprehended in a line or two, he very prudently thought, that an opinion, which the world would be apt to look upon as a monster of absurdity, would not be able to make its way at once, even by the force of a naked demonstration. He observes justly, Dial. 2. "That
"though a demonstration be never so well grounded,
"and fairly proposed, yet, if there is, withal, a strain
"of prejudice, or a wrong bias on the understanding,
"can it be expected to perceive clearly, and adhere
"firmly to the truth? No; there is need of time and
"pains; the attention must be awakened and de-
"tained by a frequent repetition of the same thing,
"placed often in the same, often in different lights."

It was therefore necessary to dwell upon it, and turn it on all sides till it became familiar; to consider all its consequences, and to obviate every prejudice and prepossession that might hinder its admittance. It was even a matter of some difficulty to fit it to common language, so far as to enable men to speak and reason about it intelligibly. Those who have entered seriously into BERKELEY's system have found, after all the assistance which his writings give, that time and practice are necessary to acquire the habit of speaking and thinking distinctly upon it.

BERKELEY foresaw the opposition that would be made to his system, from two different quarters; *first*, from the philosophers; and, *secondly*, from the vulgar, who are led by the plain dictates of nature. The first he had the courage to oppose openly and avowedly; the second he dreaded much more, and therefore takes a great deal of pains, and, I think, uses some art to court into his party. This is particularly observable in his Dialogues. He sets out with a declaration, Dial. 1. "That of late he had quitted several of the "sublime notions he had got in the schools of the "philosophers for vulgar opinions," and assures HYLAS, his fellow-dialogist, "That, since this revolt from metaphysical notions to the plain dictates of nature, "and common sense, he found his understanding "strangely enlightened; so that he could now easily "comprehend a great many things, which before "were all mystery and riddle." Pref. to Dial. "If "his principles are admitted for true, men will be reduced from paradoxes to common sense." At the same time he acknowledges, "That they carry with "them a great opposition to the prejudices of philosophers, which have so far prevailed against the common sense and natural notions of mankind."

When HYLAS objects to him, Dial. 3. "You can "never persuade me PHILONOUS, that the denying of matter or corporeal substance is not repugnant to the universal sense of mankind;" he answers, "I wish both our opinions were fairly stated, and submitted to the judgment of men who had plain common sense, without the prejudices of a learned education. Let me be represented as one who trusts his senses, who thinks he knows the things he sees and feels, and entertains no doubt of their existence. —If by material substance is meant only sensible body, that which is seen and felt, (and the unphilosophical part of the world, I dare say, mean no more,) then I am more certain of matter's existence than you or any other philosopher pretend to be. If there be any thing which makes the generality of mankind averse from the notions I espouse, it is a misapprehension that I deny the reality of sensible things: But as it is you who are guilty of that, and not I, it follows, that in truth their aversion is against your notions, and not mine.—I am content to appeal to the common sense of the world for the truth of my notion.—I am of a vulgar cast, simple enough to believe my senses, and to leave things as I find them.—I cannot, for my life, help thinking that snow is white, and fire hot."

When HYLAS is at last entirely converted, he observes to PHILONOUS, "After all, the controversy about matter, in the strict acceptation of it, lies altogether between you and the philosophers, whose principles, I acknowledge, are not near so natural, or so agreeable to the common sense of mankind, and Holy Scripture, as yours." PHILONOUS observes in the end, "That he does not pretend to be a setter up of new notions, his endeavours tend only to unite, and to place in a clearer light, that truth which was before shared between the vulgar and the philosophers;

" the former being of opinion, that those things they
" immediately perceive are the real things; and the
" latter, that the things immediately perceived are
" ideas which exist only in the mind; which two
" things put together do, in effect, constitute the sub-
" stance of what he advances:" And he concludes by observing, " That those principles, which at first
" view lead to scepticism, pursued to a certain point,
" bring men back to common sense."

These passages shew sufficiently the author's concern to reconcile his system to the plain dictates of nature and common sense, while he expresses no concern to reconcile it to the received doctrines of philosophers. He is fond to take part with the vulgar against the philosophers, and to vindicate common sense against their innovations. What pity is it that he did not carry this suspicion of the doctrine of philosophers so far as to doubt of that philosophical tenet on which his whole system is built, to wit, that the things immediately perceived by the senses are ideas which exist only in the mind!

After all, it seems no easy matter to make the vulgar opinion and that of BERKELEY to meet. And to accomplish this, he seems to me to draw each out of its line towards the other, not without some straining.

The vulgar opinion he reduces to this, that the very things which we perceive by our senses do really exist. This he grants: For these things, says he, are ideas in our minds, or complexions of ideas, to which we give one name, and consider as one thing; these are the immediate objects of sense, and these do really exist. As to the notion, that those things have an absolute external existence, independent of being perceived by any mind, he thinks that this is no notion of the vulgar, but a refinement of philosophers; and that the notion of material substance, as a *substratum*, or support of that collection of sensible qualities to which we give the name of an apple or a melon, is likewise an invention of philosophers, and is not found with the vulgar till they are instructed by philosophers. The substance not being an object of sense, the vulgar never think of it; or, if they are taught the use of the word, they mean no more by it but that collection of sensible qualities which they, from finding them conjoined in nature, have been accustomed to call by one name, and to consider as one thing.

Thus he draws the vulgar opinion near to his own; and, that he may meet it half way, he acknowledges, that material things have a real existence out of the mind of this or that person; but the question, says he, between the materialist and me, is, Whether they have an absolute existence distinct from their being perceived by God, and exterior to all minds? This, indeed, he says, some heathens and philosophers have affirmed; but whoever entertains notions of the Deity, suitable to the Holy Scripture, will be of another opinion.

But here an objection occurs, which it required all his ingenuity to answer. It is this: The ideas in my mind cannot be the same with the ideas of any other mind; therefore, if the objects I perceive be only ideas, it is impossible that the objects I perceive can exist any where, when I do not perceive them; and it is impossible that two or more minds can perceive the same object.

To this Berkeley answers, that this objection presses no less the opinion of the materialist philosopher than his; but the difficulty is, to make his opinion coincide with the notions of the vulgar, who are firmly persuaded, that the very identical objects which they perceive, continue to exist when they do not perceive them; and who are no less firmly persuaded, that when ten men look at the sun or the moon, they all see the same individual object.

To reconcile this repugnancy, he observes, Dial. 3. "That if the term *same* be taken in the vulgar acceptation, it is certain, (and not at all repugnant to the principles he maintains,) that different persons may perceive the same thing; or the same thing or idea exist in different minds. Words are of arbitrary imposition; and since men are used to apply the word *same*, where no distinction or variety is perceived, and he does not pretend to alter their perceptions, it follows, that as men have said before, *several saw the same thing;* so they may, upon like occasions, still continue to use the same phrase without any deviation, either from propriety of language or the truth of things; but if the term *same* be used in the acceptation of philosophers, who pretend to an abstracted notion of identity, then, according to their sundry definitions of this term, (for it is not yet agreed wherein that philosophic identity consists,) it may or may not be possible for divers persons to perceive the same thing; but whether philosophers shall think fit to call a thing the *same* or no, is, I conceive, of small importance. Men may dispute about identity and diversity, without any real difference in their thoughts and opinions, abstracted from names."

Upon the whole, I apprehend that BERKELEY has carried this attempt to reconcile his system to the vulgar opinion further than reason supports him: and he was no doubt tempted to do so, from a just apprehension that, in a controversy of this kind, the common sense of mankind is the most formidable antagonist.

BERKELEY has employed much pains and ingenuity to shew that his system, if received and believed, would not be attended with those bad consequences in the conduct of life which superficial thinkers may be apt to impute to it. His system does not take away or make any alteration upon our pleasures or our pains: Our sensations, whether agreeable or disagreeable, are the same upon his system as upon any other. These are real things, and the only things that interest us. They are produced in us according to certain laws of nature, by which our conduct will be directed in attaining the one, and avoiding the other: And it is of no moment to us, whether they are produced immediately by the operation of some powerful intelligent being upon our minds, or by the mediation of some inanimate being which we call *matter*.

The evidence of an all-governing mind, so far from being weakened, seems to appear even in a more striking light upon his hypothesis, than upon the common one. The powers which inanimate matter is supposed to possess, have always been the strong hold of Atheists, to which they had recourse in defence of their system. This fortress of Atheism must be most effectually overturned, if there is no such thing as matter in the universe. In all this the Bishop reasons justly and acutely. But there is one uncomfortable consequence of his system, which he seems not to have attended to, and from which it will be found difficult, if at all possible, to guard it.

The consequence I mean is this, that, although it leaves us sufficient evidence of a supreme intelligent mind, it seems to take away all the evidence we have of other intelligent beings like ourselves. What I call a father, a brother, or a friend, is only a parcel of ideas in my own mind; and being ideas in my mind, they cannot possibly have that relation to another mind which they have to mine, any more than the pain felt by me can be the individual pain felt by another. I can find no principle in BERKELEY's system, which affords me even probable ground to conclude, that there are other intelligent beings like myself, in the relations of father, brother, friend, or fellow-citizen. I am left alone, as the only creature of GOD in the universe, in that forlorn state of *Egoism*, into which, it is said, some of the disciples of DES CARTES were brought by his philosophy.

Of all the opinions that have ever been advanced by philosophers, this of Bishop BERKELEY, that there is no material world, seems the strangest, and the most apt to bring philosophy into ridicule with plain men, who are guided by the dictates of nature and common sense. And it will not, I apprehend, be improper to trace this progeny of the doctrine of ideas from its origin, and to observe its gradual progress, till it acquired such strength, that a pious and learned Bishop had the boldness to usher it into the world, as demonstrable from the principles of philosophy universally received, and as an admirable expedient for the advancement of knowledge, and for the defence of religion.

During the reign of the Peripatetic philosophy, men were little disposed to doubt, and much to dogmatize. The existence of the objects of sense was held as a first principle; and the received doctrine was, that the sensible species or idea is the very form of the external object, just separated from the matter of it, and sent into the mind that perceives it; so that we find no appearance of scepticism about the existence of matter under that philosophy.

DES CARTES taught men to doubt even of those things that had been taken for first principles. He rejected the doctrine of species or ideas coming from objects; but still maintained, that what we immediately perceive is not the external object, but an idea or image of it in our mind. This led some of his disciples into Egoism, and to disbelieve the existence of every creature in the universe but themselves and their own ideas.

But Des Cartes himself, either from dread of the censure of the church, which he took great care not to provoke, or to shun the ridicule of the world, which might have crushed his system at once, as it did that of the Egoists; or, perhaps, from inward conviction, was resolved to support the existence of matter. To do this consistently with his principles, he found himself obliged to have recourse to arguments that are far-fetched, and not very cogent. Sometimes he argues, that our senses are given us by God, who is no deceiver; and therefore we ought to believe their testimony. But this argument is weak; because, according to his principles, our senses testify no more but that we have certain ideas: And if we draw conclusions from this testimony, which the premises will not support, we deceive ourselves. To give more force to this weak argument, he sometimes adds, that we have by nature a strong propensity to believe that there is an external world corresponding to our ideas.

Malebranche thought, that this strong propensity is not a sufficient reason for believing the existence of matter; and that it is to be received as an article of faith, not certainly discoverable by reason. He is aware that faith comes by hearing; and that it may be said that prophets, apostles, and miracles, are only ideas in our minds. But to this he answers, That though these things are only ideas, yet faith turns them into realities; and this answer, he hopes, will satisfy those who are not too morose.

It may perhaps seem strange, that LOCKE, who wrote so much about ideas, should not see those consequences which BERKELEY thought so obviously deducible from that doctrine. Mr LOCKE surely was not willing that the doctrine of ideas should be thought to be loaded with such consequences. He acknowledges, that the existence of a material world is not to be received as a first principle; nor is it demonstrable; but he offers the best arguments for it he can; and supplies the weakness of his arguments by this observation, that we have such evidence as is sufficient to direct us in pursuing the good, and avoiding the ill we may receive from external things, beyond which we have no concern.

There is, indeed, a single passage in LOCKE's Essay, which may lead one to conjecture, that he had a glimpse of that system which BERKELEY afterwards advanced, but thought proper to suppress it within his own breast. The passage is in book 4. chap. 10. where, having proved the existence of an eternal intelligent mind, he comes to answer those who conceive that matter also must be eternal; because we cannot conceive how it could be made out of nothing: And having observed that the creation of minds requires no less power than the creation of matter, he adds what follows: " Nay, possibly, if we could emancipate our-
' selves from vulgar notions, and raise our thoughts,
' as far as they would reach, to a closer contemplation
' of things, we might be able to aim at some dim and
' seeming conception, how matter might at first be
' made, and begin to exist by the power of that eternal
' first Being; but to give beginning and being to a
' spirit, would be found a more inconceivable effect

"of omnipotent power. But this being what would "perhaps lead us too far from the notions on which "the philosophy now in the world is built, it would "not be pardonable to deviate so far from them, or to "inquire, so far as grammar itself would authorise, if "the common settled opinion opposes it; especially "in this place; where the received doctrine serves well "enough to our present purpose."

It appears from this passage, *first*, That Mr LOCKE had some system in his mind, perhaps not fully digested, to which we might be led, by raising our thoughts to a closer contemplation of things, and emancipating them from vulgar notions. *Secondly*, That this system would lead so far from the notions on which the philosophy now in the world is built, that he thought proper to keep it within his own breast. *Thirdly*, That it might be doubted whether this system differed so far from the common settled opinion in reality, as it seemed to do in words. *Fourthly*, By this system, we might possibly be enabled to aim at some dim and seeming conception how matter might at first be made and begin to exist; but it would give no aid in conceiving how a spirit might be made. These are the characteristics of that system which Mr LOCKE had in his mind, and thought it prudent to suppress. May they not lead to a probable conjecture, that it was the same, or something similar to that of Bishop BERKELEY? According to BERKELEY's system, GOD's creating the material world at such a time, means no more but that he decreed from that time, to produce ideas in the minds of finite spirits, in that order, and according to those rules, which we call the laws of Nature. This, indeed, removes all difficulty, in conceiving how matter was created; and BERKELEY does not fail to take notice of the advantage of his system on that account. But his system gives no aid in conceiving how a spirit may be made. It appears, therefore, that every particular Mr LOCKE has hinted, with regard to that system which he had in his mind, but thought it prudent to suppress, tallies exactly with the system of BERKELEY. If we add to this, that BERKELEY's system follows from Mr LOCKE's, by very obvious consequence, it seems reasonable to conjecture, from the passage now quoted, that he was not unaware of that consequence, but left it to those who should come after him to carry his principles their full length, when they should by time be better established, and able to bear the shock of their opposition to vulgar notions. Mr NORRIS, in his Essay towards the theory of the ideal or intelligible world, published in 1701, observes, that the material world is not an object of sense; because sensation is within us, and has no object. Its existence, therefore, he says, is a collection of reason, and not a very evident one.

From this detail we may learn, that the doctrine of ideas, as it was new modelled by DES CARTES, looked with an unfriendly aspect upon the material world; and although philosophers were very unwilling to give up either, they found it a very difficult task to reconcile them to each other. In this state of things BERKELEY, I think, is reputed the first who had the daring resolution to give up the material world altogether, as a sacrifice to the received philosophy of ideas.

But we ought not in this historical sketch to omit an author of far inferior name, ARTHUR COLLIER, Rector of Langford Magna, near Sarum. He published a book in 1713, which he calls *Clavis Universalis;* or, a new Enquiry after Truth; being a demonstration of the non-existence, or impossibility of an external world. His arguments are the same in substance with BERKE-

LEY's; and he appears to understand the whole strength of his cause. Though he is not deficient in metaphysical acuteness, his style is disagreeable, being full of conceits, of new coined words, scholastic terms, and perplexed sentences. He appears to be well acquainted with DES CARTES, MALEBRANCHE and NORRIS, as well as with ARISTOTLE and the schoolmen: But, what is very strange, it does not appear that he had ever heard of LOCKE's Essay, which had been published twenty-four years, or of BERKELEY's Principles of Knowledge, which had been published three years.

He says, he had been ten years firmly convinced of the non-existence of an external world, before he ventured to publish his book. He is far from thinking as BERKELEY does, that the vulgar are of his opinion. If his book should make any converts to his system, (of which he expresses little hope, though he has supported it by nine demonstrations,) he takes pains to shew that his disciples, notwithstanding their opinion, may, with the unenlightened, speak of material things in the common style. He himself had scruples of conscience about this for some time; and if he had not got over them, he must have shut his lips for ever: But he considered, that GOD himself has used this style in speaking to men in the Holy Scripture, and has thereby sanctified it to all the faithful; and that to the pure all things are pure. He thinks his opinion may be of great use, especially in religion; and applies it in particular, to put an end to the controversy about CHRIST's presence in the sacrament.

I have taken the liberty to give this short account of COLLIER's book, because I believe it is rare, and little known. I have only seen one copy of it, which is in the University library of Glasgow.

CHAP. XI.

Bishop BERKELEY'S *Sentiments of the Nature of Ideas.*

I PASS over the sentiments of Bishop BERKELEY, with respect to abstract ideas, and with respect to space and time, as things which may more properly be considered in another place. But I must take notice of one part of his system, wherein he seems to have deviated from the common opinion about ideas.

Though he sets out in his Principles of Knowledge by telling us, that it is evident the objects of human knowledge are ideas, and builds his whole system upon this principle; yet, in the progress of it, he finds that there are certain objects of human knowledge that are not ideas, but things which have a permanent existence. The objects of knowledge, of which we have no ideas, are our own minds, and their various operations, other finite minds, and the Supreme Mind. The reason why there can be no ideas of spirits and their operations, the author informs us, is this, That ideas are passive, inert, unthinking beings; they cannot therefore be the image or likeness of things that have thought, and will, and active power; we have notions of minds and of their operations, but not ideas: We know what we mean by thinking, willing, and perceiving; we can reason about beings endowed with those powers, but we have no ideas of them. A spirit, or mind, is the only substance or support wherein the unthinking beings or ideas can exist; but that this substance which supports or perceives ideas, should itself be an idea, or like an idea, is evidently absurd,

He observes further, Princip. sect. 142. that "all "relations including an act of the mind, we cannot "properly be said to have an idea, but rather a notion

" of the relations or habitudes between things. But if, " in the modern way, the word *idea* is extended to " spirits, and relations, and acts, this is, after all, an af- " fair of verbal concern; yet it conduces to clearness " and propriety, that we distinguish things very dif- " ferent by different names."

This is an important part of BERKELEY's system, and deserves attention. We are led by it to divide the objects of human knowledge into two kinds: The first is ideas, which we have by our five senses; they have no existence when they are not perceived, and exist only in the minds of those who perceive them. The second kind of objects comprehends spirits, their acts, and the relations and habitudes of things. Of these we have notions, but no ideas. No idea can represent them, or have any similitude to them: Yet we understand what they mean, and we can speak with understanding, and reason about them, without ideas.

This account of ideas is very different from that which LOCKE has given. In his system, we have no knowledge where we have no ideas. Every thought must have an idea for its immediate object. In BERKELEY's the most important objects are known without ideas. In LOCKE's system, there are two sources of our ideas, sensation and reflection. In BERKELEY's, sensation is the only source, because of the objects of reflection there can be no ideas. We know them without ideas. LOCKE divides our ideas into those of substances, modes, and relations. In BERKELEY's system, there are no ideas of substances, or of relations, but notions only. And even in the class of modes, the operations of our own minds are things of which we have distinct notions; but no ideas.

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We ought to do the justice to MALEBRANCHE to acknowledge, that in this point, as well as in many others, his system comes nearer to BERKELEY's than the latter seems willing to own. That author tells us, that there are four different ways in which we come to the knowledge of things. To know things by their ideas, is only one of the four. He affirms, that we have no idea of our own mind, or any of its modifications: That we know these things by consciousness, without ideas. Whether these two acute philosophers foresaw the consequences that may be drawn from the system of ideas, taken in its full extent, and which were afterwards drawn by Mr HUME, I cannot pretend to say. If they did, their regard to religion was too great to permit them to admit those consequences, or the principles with which they were necessarily connected.

However this may be, if there be so many things that may be apprehended and known without ideas, this very naturally suggests a scruple with regard to those that are left: For it may be said, If we can apprehend and reason about the world of spirits, without ideas, Is it not possible that we may apprehend and reason about a material world, without ideas? If consciousness and reflection furnish us with notions of spirits, and of their attributes, without ideas, may not our senses furnish us with notions of bodies and their attributes, without ideas?

BERKELEY foresaw this objection to his system, and puts it in the mouth of HYLAS, in the following words: Dial. 3. HYLAS. "If you can conceive the mind of "GOD, without having an idea of it, Why may not I "be allowed to conceive the existence of matter, not-"withstanding that I have no idea of it?" The answer of PHILONOUS is, "You neither perceive matter ob-"jectively, as you do an inactive being or idea, nor "know it, as you do yourself, by a reflex act, neither "do you immediately apprehend it by similitude of "the one or the other, nor yet collect it by reasoning "from that which you know immediately. All which "makes the case of matter widely different from that "of the Deity."

Though HYLAS declares himself satisfied with this answer, I confess I am not: Because, if I may trust the faculties that God has given me, I do perceive matter objectively, that is, something which is extended and solid, which may be measured and weighed, is the immediate object of my touch and sight. And this object I take to be matter, and not an idea. And though I have been taught by Philosophers, that what I immediately touch is an idea, and not matter; yet I have never been able to discover this by the most accurate attention to my own perceptions.

It were to be wished, that this ingenious author had explained what he means by ideas, as distinguished from notions. The word *notion*, being a word in common language, is well understood. All men mean by it, the conception, the apprehension, or thought which we have of any object of thought. A notion, therefore, is an act of the mind conceiving or thinking of some object. The object of thought may be either something that is in the mind, or something that is not in the mind. It may be something that has no existence, or something that did, or does, or shall exist. But the notion which I have of that object, is an act of my mind which really exists while I think of the object; but has no existence when I do not think of it. The word *idea*, in popular language, has precisely the same meaning as the word *notion*. But Philosophers have another meaning to the word *idea;* and what that meaning is, I think, is very difficult to say.

The whole of Bishop BERKELEY'S system depends upon the distinction between notions and ideas; and therefore it is worth while to find, if we are able, what those things are which he calls ideas, as distinguished from notions.

For this purpose, we may observe, that he takes notice of two kinds of ideas, the ideas of sense, and the ideas of imagination. "The ideas imprinted on the "senses by the Author of nature, he says, are called "real things; and those excited in the imagination, "being less regular, vivid, and constant, are more pro-"perly termed ideas, or images of things, which they "copy and represent. But then our sensations, be "they never so vivid and distinct, are nevertheless "ideas; that is, they exist in the mind, or are perceiv-"ed by it as truly as the ideas of its own framing. The "ideas of sense are allowed to have more reality in "them; that is, to be more strong, orderly, and cohe-"rent, than the creatures of the mind. They are also "less dependent on the spirit or thinking substance "which perceives them, in that they are excited by "the will of another and more powerful spirit; yet "still they are ideas; and certainly no idea, whether "faint or strong, can exist, otherwise than in a mind "perceiving it." Princip. sect. 33.

From this passage we see, that, by the ideas of sense, the author means sensations: And this, indeed is evident from many other passages, of which I shall mention a few, Princip. sect. 5. "Light and colours, heat "and cold, extension and figure, in a word, the things "we see and feel, what are they but so many sensa-"tions, notions, ideas, or impressions on the sense; and "is it possible to separate, even in thought, any of these "from perception? For my part, I might as easily di-"vide a thing from itself." Sect. 18. "As for our "senses, by them we have the knowledge only of our "sensations, ideas, or those things that are immediately

" perceived by sense; call them what you will: But " they do not inform us that things exist without the " mind, or unperceived, like to those which are per" ceived." Sect. 25. " All our ideas, sensations, or " the things which we perceive, by whatever names " they may be distinguished, are visibly inactive; " there is nothing of power or agency included in " them."

This therefore appears certain, that, by the ideas of sense, the author meant the sensations we have by means of our senses. I have endeavoured to explain the meaning of the word *sensation*, Essay I. chap. I. and refer to the explication there given of it, which appears to me to be perfectly agreeable to the sense in which Bishop BERKELEY uses it.

As there can be no notion or thought but in a thinking being; so there can be no sensation but in a sentient being. It is the act, or being of a sentient being; its very essence consists in its being felt. Nothing can resemble a sensation, but a similar sensation in the same, or in some other mind. To think that any quality in a thing that is inanimate can resemble a sensation, is a great absurdity. In all this, I cannot but agree perfectly with Bishop BERKELEY; and I think his notions of sensation much more distinct and accurate than LOCKE's, who thought that the primary qualities of body are resemblances of our sensations, but that the secondary are not.

That we have many sensations by means of our external senses, there can be no doubt; and if he is pleased to call those ideas, there ought to be no dispute about the meaning of a word. But, says Bishop BERKELEY, By our senses, we have the knowledge *only* of our sensations or ideas, call them which you will. I allow him to call them which he will; but I would have the word *only* in this sentence to be well weighed, because a great deal depends upon it.

For if it be true, that, by our senses, we have the knowledge of our sensations only, then his system must be admitted, and the existence of a material world must be given up as a dream. No demonstration can be more invincible than this. If we have any knowledge of a material world, it must be by the senses: But, by the senses, we have no knowledge but of our sensations only; and our sensations have no resemblance of any thing that can be in a material world. The only proposition in this demonstration which admits of doubt is, that, by our senses, we have the knowledge of our sensations only, and of nothing else. If there are objects of the senses which are not sensations, his arguments do not touch them; they may be things which do not exist in the mind, as all sensations do; they may be things, of which, by our senses, we have notions, though no ideas; just as, by consciousness and reflection, we have notions of spirits, and of their operations, without ideas or sensations.

Shall we say then, that, by our senses, we have the knowledge of our sensations only; and that they give us no notion of any thing but of our sensations? Perhaps this has been the doctrine of philosophers, and not of Bishop BERKELEY alone, otherwise he would have supported it by arguments. Mr LOCKE calls all the notions we have by our senses, *ideas of sensation*; and in this has been very generally followed. Hence it seems a very natural inference, that ideas of sensation are sensations. But philosophers may err: Let us hear the dictates of common sense upon this point.

Suppose I am pricked with a pin, I ask, Is the pain I feel, a sensation? undoubtedly it is. There can be nothing that resembles pain in any inanimate being;

But I ask again, Is the pin a sensation? To this question, I find myself under a necessity of answering, That the pin is not a sensation, nor can have the least resemblance to any sensation. The pin has length, and thickness, and figure, and weight. A sensation can have none of those qualities. I am not more certain that the pain I feel is a sensation, than that the pin is not a sensation; yet the pin is an object of sense, and I am as certain, that I perceive its figure and hardness by my senses, as that I feel pain when pricked by it.

Having said so much of the ideas of sense in BERKELEY's system, we are next to consider the account he gives of the ideas of imagination. Of these he says, Princip. sect. 28. "I find I can excite ideas in my "mind at pleasure, and vary and shift the scene as oft "as I think fit. It is no more than willing; and "and straightway this or that idea arises in my fan-"cy; and by the same power it is obliterated, and "makes way for another. This making and unmak-"ing of ideas, doth very properly denominate the "mind active. This much is certain, and grounded "on experience. Our sensations, he says, are called "real things; the ideas of imagination are more pro-"perly termed *ideas*, or *images of things*;" that is, as I apprehend, they are the images of our sensations. It might surely be expected, that we should be well acquainted with the ideas of imagination, as they are of our making; yet, after all the Bishop has said about them, I am at a loss to know what they are.

I would observe in the *first* place, With regard to these ideas of imagination, that they are not sensations; for surely sensation is the work of the senses, and not of imagination; and though pain be a sensation, the thought of pain, when I am not pained, is no sensation.

I observe, in the *second* place, That I can find no distinction between ideas of imagination, and notions, which the author says, are not ideas. I can easily distinguish between a notion and a sensation. It is one thing to say, I have the sensation of pain. It is another thing to say, I have a notion of pain. The last expression signifies no more than that I understand what is meant by the word *pain*. The first signifies, that I really feel pain. But I can find no distinction between the notion of pain, and the imagination of it, or indeed between the notion of any thing else, and the imagination of it. I can therefore give no account of the distinction which BERKELEY makes between ideas of imagination, and notions, which he says, are not ideas. They seem to me perfectly to coincide.

He seems indeed to say, that the ideas of imagination differ not in kind from those of the senses, but only in the degree of their regularity, vivacity, and constancy. " They are, says he, less regular, vi-" vid, and constant." This doctrine was afterwards greedily embraced by Mr HUME, and makes a main pillar of his system; but it cannot be reconciled to common sense, to which Bishop BERKELEY professes a great regard. For, according to this doctrine, if we compare the state of a man racked with the gout, with his state, when being at perfect ease, he relates what he has suffered; the difference of these two states is only this, that, in the last, the pain is less regular, vivid, and constant, than in the first. We cannot possibly assent to this. Every man knows that he can relate the pain he suffered, not only without pain, but with pleasure; and that to suffer pain, and to think of it, are things which totally differ in kind, and not in degree only.

We see, therefore, upon the whole, that according to this system, of the most important objects of knowledge, that is, of spirits, of their operations, and of the relations of things, we have no ideas at all; we have notions of them, but not ideas: The ideas we have are those of sense, and those of imagination. The first are the sensations we have by means of our senses, whose existence no man can deny, because he is conscious of them; and whose nature hath been explained by this author with great accuracy. As to the ideas of imagination, he hath left us much in the dark: He makes them images of our sensations, though, according to his own doctrine, nothing can resemble a sensation, but a sensation. He seems to think, that they differ from sensations only in the degree of their regularity, vivacity, and constancy: But this cannot be reconciled to the experience of mankind; and besides this mark, which cannot be admitted, he hath given us no other mark by which they may be distinguished from notions: Nay, it may be observed, that the very reason he gives why we can have no ideas of the acts of the mind about its ideas, nor of the relations of things is applicable to what he calls ideas of imagination. Princip. sect. 142. "We may not, "I think, strictly be said to have an idea of an active "being, or of an action, although we may be said to "have a notion of them. I have some knowledge or "notion of my mind, and its acts about ideas, in as "much as I know or understand what is meant by "these words. It is also to be remarked, that all re-"lations, including an act of the mind, we cannot so "properly be said to have an idea, but rather a notion "of the relations and habitudes between things." From this it follows, that our imaginations are no properly ideas, but notions, because they include an act of the mind. For he tells us, in a passage already quoted, that they are creatures of the mind, of its own framing, and that it makes and unmakes them as it thinks fit, and from this is properly denominated active. If it be a good reason why we have not ideas, but notions only of relations, because they include an act of the mind; the same reason must lead us to conclude, that our imaginations are notions, and not ideas, since they are made and unmade by the mind as it thinks fit, and from this it is properly denominated active.

When so much has been written, and so many disputes raised about ideas, it were desirable that we knew what they are, and to what category or class of beings they belong. In this, we might expect satisfaction in the writings of Bishop BERKELEY, if any where, considering his known accuracy and precision in the use of words; and it is for this reason that I have taken so much pains to find out what he took them to be.

After all, if I understand what he calls the ideas of sense, they are the sensations which we have by means of our five senses; but they are, he says, less properly termed ideas.

I understand likewise what he calls notions, but they, says he, are very different from ideas, though, in the modern way, often called by that name.

The ideas of imagination remain, which are most properly termed ideas, as he says; and, with regard to these, I am still very much in the dark. When I imagine a lion or an elephant, the lion or an elephant is the object imagined. The act of the mind, in conceiving that object, is the notion, the conception, or imagination of the object. If, besides the object, and the act of the mind about it, there be something called the idea of the object, I know not what it is.

If we consult other authors who have treated of ideas, we shall find as little satisfaction with regard to the meaning of this philosophical term. The vulgar have adopted it; but they only mean by it the notion or conception we have of any object, especially our more abstract or general notions. When it is thus put to signify the operation of the mind about objects, whether in conceiving, remembering, or perceiving, it is well understood. But philosophers will have ideas to be the objects of the mind's operations, and not the operations themselves. There is, indeed, great variety of objects of thought. We can think of minds, and of their operations, of bodies, and of their qualities and relations. If ideas are not comprehended under any of these classes, I am at a loss to comprehend what they are.

In ancient philosophy, ideas were said to be immaterial forms, which, according to one system, existed from all eternity, and, according to another, are sent forth from the objects, whose form they are. In modern philosophy, they are things in the mind, which are the immediate objects of all our thoughts, and which have no existence when we do not think of them. They are called the images, the resemblances, the representatives of external objects of sense; yet they have neither colour, nor smell, nor figure, nor motion, nor any sensible quality. I revere the authority of philosophers, especially where they are so unanimous; but until I can comprehend what they mean by ideas, I must think and speak with the vulgar.

In sensation, properly so called, I can distinguish two things, the mind or sentient being, and the sensation. Whether the last is to be called a feeling or an operation, I dispute not; but it has no object distinct from the sensation itself. If in sensation there be a third thing, called an idea, I know not what it is.

In perception, in remembrance, and in conception, or imagination, I distinguish three things, the mind that operates, the operation of the mind, and the object of that operation. That the object perceived is one thing, and the perception of that object another, I am as certain as I can be of any thing. The same may be said of conception, of remembrance, of love and hatred, of desire and aversion. In all these the act of the mind about its object is one thing, the object is another thing. There must be an object, real or imaginary, distinct from the operation of the mind about it. Now, if in these operations the idea be a fourth thing different from the three I have mentioned, I know not what it is, nor have been able to learn from all that has been written about ideas. And if the doctrine of philosophers about ideas confounds any two of these things which I have mentioned as distinct; if, for example, it confounds the object perceived with the perception of that object, and represents them as one and the same thing, such doctrine is altogether repugnant to all that I am able to discover of the operations of my own mind; and it is repugnant to the common sense of mankind, expressed in the structure of all languages.

CHAP. XII.

Of the Sentiments of Mr HUME.

TWO volumes of the Treatise of Human Nature were published in 1739, and the third in 1740. The doctrine contained in this Treatise was published anew in a more popular form in Mr HUME's Philosophical

Essays, of which there have been various editions. What other authors, from the time of Des Cartes, had called *ideas*, this author distinguished into two kinds, to wit, *impressions* and *ideas*; comprehending under the first, all our sensations, passions, and emotions; and under the last, the faint images of these, when we remember or imagine them.

He sets out with this, as a principle that needed no proof, and of which therefore he offers none, That all the perceptions of the human mind resolve themselves into these two kinds, *impressions* and *ideas*.

As this proposition is the foundation upon which the whole of Mr Hume's system rests, and from which it is raised with great acuteness indeed, and ingenuity, it were to be wished that he had told us upon what authority this fundamental proposition rests. But we are left to guess, whether it is held forth as a first principle, which has its evidence in itself; or whether it is to be received upon the authority of philosophers.

Mr Locke had taught us, that all the immediate objects of human knowledge are ideas in the mind. Bishop Berkeley, proceeding upon this foundation, demonstrated very easily, that there is no material world. And he thought, that, for the purposes, both of philosophy and religion, we should find no loss, but great benefit in the want of it. But the Bishop, as became his order, was unwilling to give up the world of spirits. He saw very well, that ideas are as unfit to represent spirits as they are to represent bodies. Perhaps he saw, that if we perceive only the ideas of spirits, we shall find the same difficulty in inferring their real existence from the existence of their ideas, as we find in inferring the existence of matter from the idea of it; and therefore, while he gives up the material world in favour of the system of ideas, he gives up one half of that system in favour of the world of spirits; and maintains, that we can without ideas think, and speak, and reason, intelligibly about spirits, and what belongs to them.

Mr HUME shews no such partiality in favour of the world of spirits. He adopts the theory of ideas in its full extent; and, in consequence, shews that there is neither matter nor mind in the universe; nothing but impressions and ideas. What we call a *body*, is only a bundle of sensations; and what we call the *mind*, is only a bundle of thoughts, passions, and emotions, without any subject.

Some ages hence it will perhaps be looked upon as a curious anecdote, that two philosophers of the 18th century, of very distinguished rank, were led by a philosophical hypothesis; one to disbelieve the existence of matter, and the other to disbelieve the existence both of matter and of mind. Such an anecdote may not be uninstructive, if it prove a warning to philosophers to beware of hypotheses, especially when they lead to conclusions which contradict the principles upon which all men of common sense must act in common life.

The Egoists, whom we mentioned before, were left far behind by Mr HUME; for they believed their own existence, and perhaps also the existence of a Deity. But Mr HUME's system does not even leave him a *self* to claim the property of his impressions and ideas.

A system of consequences, however absurd, acutely and justly drawn from a few principles, in very abstract matters, is of real utility in science, and may be made subservient to real knowledge. This merit Mr HUME's metaphysical writings have in a great degree.

We had occasion before to observe, that since the time of DES CARTES, philosophers, in treating of the powers of the mind, have in many instances confounded things, which the common sense of mankind has always led them to distinguish, and which have different names in all languages. Thus, in the perception of an external object, all languages distinguish three things, the *mind* that perceives, the operation of that mind, which is called *perception*, and the *object* perceived. Nothing appears more evident to a mind untutored by philosophy, than that these three are distinct things, which, though related, ought never to be confounded. The structure of all languages supposes this distinction, and is built upon it. Philosophers have introduced a fourth thing in this process, which they call the *idea* of the object, which is supposed to be an image, or representative of the object, and is said to be the immediate object. The vulgar know nothing about this idea; it is a creature of philosophy, introduced to account for, and explain, the manner of our perceiving external objects.

It is pleasant to observe, that while philosophers, for more than a century, have been labouring, by means of ideas, to explain perception, and the other operations of the mind, those ideas have by degrees usurped the place of perception, object, and even of the mind itself, and have supplanted those very things they were brought to explain. DES CARTES reduced all the operations of the understanding to perception; and what can be more natural to those who believe that they are only different modes of perceiving ideas in our own minds. LOCKE confounds ideas, sometimes with the perception of an external object, sometimes with the external object itself. In BERKELEY's system, the idea is the only object, and yet is often confounded with the perception of it. But in HUME's, the idea or the impression, which is only a more lively idea, is mind, perception, and object, all in one: So that, by the term perception in Mr HUME's system, we must understand the mind itself, all its operations, both of understanding and will, and all the objects of these operations. Perception, taken in this sense, he divides into the more lively perceptions, which he calls *impressions*, and the less lively, which he calls *ideas*. To prevent repetition, I must here refer the reader to some remarks made upon this division, Essay I. chap. I. in the explication there given of the words *perceive*, *object*, *impression*.

Philosophers have differed very much with regard to the origin of our ideas, or the sources whence they are derived. The Peripatetics held, that all knowledge is derived originally from the senses; and this ancient doctrine seems to be revived by some late French philosophers, and by Dr HARTLEY and Dr PRIESTLY among the British. DES CARTES maintained, that many of our ideas are innate. LOCKE opposed the doctrine of innate ideas with much zeal, and employs the whole first book of his Essay against it. But he admits two different sources of ideas; the operations of our external senses, which he calls *sensation*, by which we get all our ideas of body, and its attributes; and *reflection* upon the operations of our minds, by which we get the ideas of every thing belonging to the mind. The main design of the second book of LOCKE's Essay, is to shew, that all our simple ideas, without exception, are derived from the one or the other, or both of these sources. In doing this, the author is led into some paradoxes, although, in general, he is not fond of paradoxes: And had he foreseen all the consequences that may be drawn from his account of the origin of our ideas, he would probably have examined it more carefully.

Mr HUME adopts LOCKE's account of the origin of our ideas, and from that principle infers, that we have no idea of substance, corporeal or spiritual, no idea of power, no other idea of a cause, but that it is something antecedent, and constantly conjoined to that which we call its effect; and, in a word, that we can have no idea of any thing but our sensations, and the operations of mind we are conscious of.

This author leaves no power to the mind in framing its ideas and impressions; and no wonder, since he holds that we have no idea of power; and the mind is nothing but that succession of impressions and ideas of which we are intimately conscious.

He thinks, therefore, that our impressions arise from unknown causes, and that the impressions are the causes of their corresponding ideas. By this he means no more but that they always go before the ideas; for this is all that is necessary to constitute the relation of cause and effect.

As to the order and succession of our ideas, he holds it to be determined by three laws of attraction or association, which he takes to be original properties of the ideas, by which they attract, as it were, or associate themselves with other ideas which either resemble them, or which have been contiguous to them in time and place, or to which they have the relations of cause and effect.

We may here observe by the way, that the last of these three laws seems to be included in the second, since causation, according to him, implies no more than contiguity in time and place.

It is not my design at present to shew how Mr HUME, upon the principles he has borrowed from

LOCKE and BERKELEY, has with great acuteness reared a system of absolute scepticism, which leaves no rational ground to believe any one proposition, rather than its contrary: My intention in this place being only to give a detail of the sentiments of philosophers concerning ideas since they became an object of speculation, and concerning the manner of our perceiving external objects by their means.

CHAP. XIII.

Of the Sentiments of ANTONY ARNAULD.

IN this sketch of the opinions of philosophers concerning ideas, we must not omit ANTONY ARNAULD, doctor of the Sorbonne, who, in the year 1683, published his book of True and False Ideas, in opposition to the system of MALEBRANCHE, before mentioned. It is only about ten years since I could find this book, and I believe it is rare.

Though ARNAULD wrote before LOCKE, BERKELEY, and HUME, I have reserved to the last place some account of his sentiments, because it seems difficult to determine whether he adopted the common theory of ideas, or whether he is singular in rejecting it altogether as a fiction of philosophers.

The controversy between MALEBRANCHE and ARNAULD necessarily led them to consider what kind of things ideas are, a point upon which other philosophers had very generally been silent. Both of them professed the doctrine universally received, that we perceive not material things immediately, that it is their ideas that are the immediate objects of our thought, and that it is in the idea of every thing that we perceive its properties.

It is necessary to premise that both these authors use the word *perception*, as DES CARTES had done before them, to signify every operation of the understanding. "To think, to know, to perceive, are the same thing," says Mr ARNAULD, chap. 5. def. 2. It is likewise to be observed, that the various operations of the mind are by both called modifications of the mind. Perhaps they were led into this phrase by the Cartesian doctrine, that the essence of the mind consists in thinking, as that of body consists in extension. I apprehend, therefore, that when they make sensation, perception, memory, and imagination, to be various modifications of the mind, they mean no more, but that these are things which can only exist in the mind as their subject. We express the same thing, by calling them various modes of thinking, or various operations of the mind.

The things which the mind perceives, says MALEBRANCHE, are of two kinds. They are either in the mind itself, or they are external to it. The things in the mind, are all its different modifications, its sensations, its imaginations, its pure intellections, its passions and affections. These are immediately perceived; we are conscious of them, and have no need of ideas to represent them to us.

Things external to the mind, are either corporeal or spiritual. With regard to the last, he thinks it possible, that, in another state, spirits may be an immediate object of our understandings, and so be perceived without ideas; that there may be such an union of spirits as that they may immediately perceive each other, and communicate their thoughts mutually, without signs, and without ideas.

But leaving this as a problematical point, he holds it to be undeniable, that material things cannot be perceived immediately, but only by the mediation of ideas. He thought it likewise undeniable, that the idea must be immediately present to the mind, that it must touch the soul as it were, and modify its perception of the object.

From these principles we must necessarily conclude, either that the idea is some modification of the human mind, or that it must be an idea in the Divine Mind, which is always intimately present with our minds. The matter being brought to this alternative, MALEBRANCHE considers first, all the possible ways such a modification may be produced in our mind as that we call an idea of a material object, taking it for granted always, that it must be an object perceived, and something different from the act of the mind in perceiving it. He finds insuperable objections against every hypothesis of such ideas being produced in our minds, and therefore concludes, that the immediate objects of perception are the ideas of the Divine Mind.

Against this system ARNAULD wrote his book of True and False Ideas. He does not object to the alternative mentioned by MALEBRANCHE; but he maintains, that ideas are modifications of our minds. And finding no other modification of the human mind which can be called the idea of an external object, he says it is only another word for perception. Chap. 5. def. 3. " I take the idea of an object, and the perception of an object, to be the same thing. I do not " say whether there may be other things to which the " name of idea may be given. But it is certain that " there are ideas taken in this sense, and that these " ideas are either attributes or modifications of our " minds."

This, I think indeed, was to attack the system of MALEBRANCHE upon its weak side, and where, at the same time, an attack was least expected. Philosophers had been so unanimous in maintaining that we do not perceive external objects immediately, but by certain representative images of them called *ideas*, that MALEBRANCHE might well think his system secure upon that quarter, and that the only question to be determined was, In what subject those ideas are placed, whether in the human or in the Divine Mind?

But, says Mr ARNAULD, those ideas are mere chimeras, fictions of philosophers; there are no such beings in nature; and therefore it is to no purpose to inquire whether they are in the Divine or in the human mind. The only true and real ideas are our perceptions, which are acknowledged by all philosophers, and MALEBRANCHE himself, to be acts or modifications of our own minds. He does not say that the fictitious ideas were a fiction of MALEBRANCHE. He acknowledges, that they had been very generally maintained by the scholastic philosophers, and points out, very judiciously, the prejudices that had led them into the belief of such ideas.

Of all the powers of our mind, the external senses are thought to be the best understood, and their objects are the most familiar. Hence we measure other powers by them, and transfer to other powers the language which properly belongs to them. The objects of sense must be present to the sense, or within its sphere, in order to their being perceived. Hence, by analogy, we are led to say of every thing when we think of it, that it is present to the mind, or in the mind. But this presence is metaphorical, or analogical only; and ARNAULD calls it objective presence, to distinguish it from that local presence which is required in objects that are perceived by sense. But both being called by the same name, they are confounded together, and those things that belong only to real or local presence, are attributed to the metaphorical.

We are likewise accustomed to see objects by their images in a mirror, or in water; and hence are led, by analogy, to think that objects may be presented to the memory or imagination, in some similar manner, by images, which philosophers have called *ideas.*

By such prejudices and analogies, ARNAULD conceives, men have been led to believe, that the objects of memory and imagination must be presented to the mind by images or ideas; and the philosophers have been more carried away by these prejudices than even the vulgar, because the use made of this theory was to explain and account for the various operations of the mind, a matter in which the vulgar take no concern.

He thinks, however, that DES CARTES, had got the better of these prejudices, and that he uses the word idea as signifying the same thing with perception, and is therefore surprised that a disciple of DES CARTES, and one who was so great an admirer of him as MALEBRANCHE was, should be carried away by them. It is strange, indeed, that the two most eminent disciples of DES CARTES, and his cotemporaries, should differ so essentially with regard to his doctrine concerning ideas.

I shall not attempt to give the reader an account of the continuation of this controversy between those two acute philosophers, in the subsequent defences and replies; because I have not access to see them. After much reasoning, and some animosity, each continued in his own opinion, and left his antagonist where he found him. MALEBRANCHE's opinion of our seeing all things in God, soon died away of itself; and ARNAULD's notion of ideas seems to have been less regarded than it deserved, by the philosophers that came after him; perhaps for this reason, among others, that it seemed to be in some sort given up by himself, in his attempting to reconcile it to the common doctrine concerning ideas.

From the account I have given, one would be apt to conclude, that ARNAULD totally denied the existence of ideas, in the philosophical sense of that word, and that he adopted the notion of the vulgar, who acknowledge no object of perception but the external object. But he seems very unwilling to deviate so far from the common track, and what he had given up with one hand he takes back with the other.

For, *first*, Having defined ideas to be the same thing with perceptions, he adds this qualification to his definition: "I do not here consider whether there are "other things that may be called ideas; but it is "certain there are ideas taken in this sense." I believe, indeed, there is no philosopher who does not, on some occasions, use the word *idea* in this popular sense.

Secondly, He supports this popular sense of the word by the authority of DES CARTES, who, in his demonstration of the existence of God from the idea of him in our minds, defines an idea thus: "By the word "*idea*, I understand that form of any thought, by the "immediate perception of which I am conscious of "that thought; so that I can express nothing by "words, with understanding, without being certain "that there is in my mind the idea of that which is "expressed by the words." This definition seems, indeed, to be of the same import with that which is given by ARNAULD. But DES CARTES adds a qualification to it, which ARNAULD, in quoting it, omits; and which shews, that DES CARTES meant to limit his definition to the idea then treated of, that is, to the idea of the Deity; and that there are other ideas to which this definition does not apply. For he adds: "And thus I give the name of idea, not solely to the "images painted in the phantasy. Nay, in this place, "I do not at all give the name of ideas to those images, "in so far as they are painted in the corporeal phan"tasy, that is in some part of the brain, but only in so "far as they inform the mind, turning its attention to "that part of the brain."

Thirdly, ARNAULD has employed the whole of his sixth chapter, to shew that these ways of speaking, common among philosopers, to wit, *that we perceive not things immediately; that it is their ideas that are the immediate objects of our thoughts; that it is in the idea of every thing that we perceive its properties*, are not to be rejected, but are true when rightly understood. He labours to reconcile these expressions to his own definitions of ideas, by observing, that every perception, and every thought is necessarily conscious of itself, and reflects upon itself; and that, by this consciousness and reflection, it is its own immediate object. Whence he infers, that the idea, that is, the perception, is the immediate object of perception.

This looks like a weak attempt to reconcile two inconsistent doctrines, by one who wishes to hold both. It is true, that consciousness always goes along with perception; but they are different operations of the mind, and they have their different objects. Consciousness is not perception, nor is the object of consciousness the object of perception. The same may be said of every operation of mind that has an object. Thus, injury is the object of resentment. When I resent an injury, I am conscious of my resentment; that is, my resentment is the immediate, and the only object of my consciousness; but it would be absurd to infer from this, that my resentment is the immediate object of my resentment.

Upon the whole, if ARNAULD, in consequence of his doctrine, that ideas, taken for representative images of external objects, are a mere fiction of the philosophers, had rejected boldly the doctrine of DES CARTES, as well as of the other philosophers, concerning those fictitious beings, and all the ways of speaking that imply their existence, I should have thought him more consistent with himself, and his doctrine concerning ideas, more rational and more intelligible than that of any other author of my acquaintance who has treated of the subject.

CHAP. XIV.

Reflections on the common Theory of Ideas.

AFTER so long a detail of the sentiments of philosophers, ancient and modern, concerning ideas, it may seem presumptuous to call in question their existence. But no philosophical opinion, however ancient, however generally received, ought to rest upon authority. There is no presumption in requiring evidence for it, or in regulating our belief by the evidence we can find.

To prevent mistakes, the reader must again be reminded, that if by *ideas* are meant only the acts or operations of our minds in perceiving, remembering, or imagining objects, I am far from calling in question the existence of those acts; we are conscious of them every day, and every hour of life; and I believe no man of a sound mind ever doubted of the real existence of the operations of mind, of which he is conscious. Nor is it to be doubted, that by the faculties which God has given us, we can conceive things that are absent, as well as perceive those that are within the reach of our senses; and that such conceptions may be more or less distinct, and more or less lively and strong. We have reason to ascribe to the all-knowing and all-perfect Being, distinct conceptions of all things existent and possible, and of all their relations; and if these conceptions are called his *eternal ideas*, there ought to be no dispute among philosophers about a word. The ideas, of whose existence I require the proof, are not the operations of any mind, but supposed objects of those operations. They are not perception, remembrance, or conception, but things that are said to be perceived, or remembered, or imagined.

Nor do I dispute the existence of what the vulgar call the objects of perception. These, by all who acknowledge their existence, are called *real things*, not *ideas*. But philosophers maintain, that, besides these, there are immediate objects of perception in the mind itself: That, for instance, we do not see the sun immediately, but an idea; or, as Mr HUME calls it, an impression in our own minds. This idea is said to be the image, the resemblance, the representative of the sun, if there be a sun. It is from the existence of the idea that we must infer the existence of the sun. But the idea being immediately perceived, there can be no doubt, as philosophers think, of its existence.

In like manner, when I remember, or when I imagine any thing, all men acknowledge that there must be something that is remembered, or that is imagined; that is, some object of those operations. The object remembered must be something that did exist in time past. The object imagined, may be something that never existed. But, say the philosophers, besides these objects which all men acknowledge, there is a more immediate object which really exists in the mind at the same time we remember or imagine. This object is an idea, or image of the thing remembered or imagined.

The *first* reflection I would make on this philosophical opinion is, That it is directly contrary to the universal sense of men who have not been instructed in philosophy. When we see the sun or moon, we have no doubt that the very objects which we immediately see, are very far distant from us, and from one another. We have not the least doubt, that this is the sun and moon which God created some thousands of years ago, and which have continued to perform their revolutions in the heavens ever since. But how are we astonished when the philosopher informs us, that we are mistaken in all this; that the sun and moon which we see, are not, as we imagine, many miles distant from us, and from each other, but that they are in our own mind; that they had no existence before we saw them, and will have none when we cease to perceive and to think of them; because the objects we perceive are only ideas in our own minds, which can have no existence a moment longer than we think of them.

If a plain man, uninstructed in philosophy, has faith to receive these mysteries, how great must be his astonishment. He is brought into a new world, where every thing he sees, tastes, or touches, is an idea; a fleeting kind of being which he can conjure into existence, or can annihilate in the twinkling of an eye.

After his mind is somewhat composed, it will be natural for him to ask his philosophical instructor, Pray, Sir, are there then no substantial and permanent beings called the sun and moon, which continue to exist whether we think of them or not?

Here the philosophers differ. Mr LOCKE, and those that were before him, will answer to this question, That it is very true, there are substantial and permanent beings called the sun and moon; but they never appear to us in their own person, but by their representatives, the ideas in our own minds, and we know nothing of them but what we can gather from those ideas.

Bishop BERKELEY and Mr HUME, would give a different answer to the question proposed: They would assure the querist, that it is a vulgar error, a mere prejudice of the ignorant and unlearned, to think that there are any permanent and substantial beings called the sun and moon; that the heavenly bodies, our own bodies, and all bodies whatsoever, are nothing but ideas in our minds; and that there can be nothing like the ideas of one mind, but the ideas of another mind. There is nothing in nature but minds and ideas, says the Bishop, nay, says Mr HUME, there is nothing in nature but ideas only; for what we call a mind, is nothing but a train of ideas connected by certain relations between themselves.

In this representation of the theory of ideas, there is nothing exaggerated or misrepresented, as far as I am able to judge; and surely nothing further is necessary to shew, that, to the uninstructed in philosophy, it must appear extravagant and visionary, and most contrary to the dictates of common understanding.

There is the less need of any further proof of this, that it is very amply acknowledged by Mr HUME in his Essay on the Academical or Sceptical Philosophy. "It seems evident, says he, that men are carried by a "natural instinct, or prepossession, to repose faith in "their senses; and that without any reasoning, or "even almost before the use of reason, we always suppose an external universe, which depends not on our "perception, but would exist though we and every "sensible creature were absent or annihilated. Even "the animal creation are governed by a like opinion, "and preserve this belief of external objects in all their "thoughts, designs, and actions.

"It seems also evident, that when men follow this "blind and powerful instinct of nature, they always "suppose the very images presented by the senses to "be the external objects, and never entertain any suspicion, that the one are nothing but representations "of the other. This very table which we see white, "and feel hard, is believed to exist independent of our "perception, and to be something external to the "mind which perceives it; our presence bestows not "being upon it; our absence annihilates it not: It "preserves its existence uniform and entire, independent of the situation of intelligent beings who perceive or contemplate it.

"But this universal and primary notion of all men "is soon destroyed by the slightest philosophy, which "teaches us, that nothing can ever be present to the "mind, but in image or perception; and that the "senses are only the inlets through which these images "are received, without being ever able to produce any "immediate intercourse between the mind and the "object."

It is therefore acknowledged by this philosopher, to be a natural instinct or prepossession, an universal and primary opinion of all men, a primary instinct of nature, that the objects which we immediately perceive by our senses, are not images in our minds, but external objects, and that their existence is independent of us, and our perception.

In this acknowledgment, Mr Hume, indeed, seems to me more generous, and even more ingenuous than Bishop Berkeley, who would persuade us, that his opinion does not oppose the vulgar opinion, but only that of the philosophers; and that the external existence of a material world is a philosophical hypothesis, and not the natural dictate of our perceptive powers. The Bishop shews a timidity of engaging such an adversary, as a primary and universal opinion of all men. He is rather fond to court its patronage. But the philosopher intrepidly gives a defiance to this antagonist, and seems to glory in a conflict that was worthy of his arm. *Optat aprum aut fulvum descendere monte leonem.* After all, I suspect that a philosopher, who wages war with this adversary, will find himself in the same condition as a mathematician who should undertake to demonstrate, that there is no truth in the axioms of mathematics.

A *second* reflection upon this subject is, That the authors who have treated of ideas, have generally taken their existence for granted, as a thing that could not be called in question; and such arguments as they have mentioned incidentally, in order to prove it, seem too weak to support the conclusion.

Mr Locke, in the introduction to his Essay, tells us, that he uses the word *idea* to signify whatever is the immediate object of thought; and then adds, "I presume it will be easily granted me that there are such "ideas in mens minds; every one is conscious of them "in himself, and mens words and actions will satisfy "him that they are in others." I am indeed conscious of perceiving, remembering, imagining; but that the objects of these operations are images in my mind I am not conscious. I am satisfied by mens words and actions, that they often perceive the same objects which I perceive, which could not be, if those objects were ideas in their own minds.

Mr Norris is the only author I have met with, who professedly puts the question, Whether material things can be perceived by us immediately? He has offered four arguments to shew that they cannot. *First*, "Material objects are without the mind, and therefore "there can be no union between the object and the "percipient." *Answer*, This argument is lame, until it is shewn to be necessary that in perception there should be a union between the object and the percipient. *Second*, "Material objects are disproportioned "to the mind, and removed from it by the whole diameter of Being." This argument I cannot answer, because I do not understand it. *Third*, "Because if "material objects were immediate objects of perception, there could be no physical science; things necessary and immutable being the only object of "science." *Answer*, Although things necessary and immutable be not the immediate objects of perception, they may be immediate objects of other powers of the mind. *Fourth*, "If material things were perceived "by themselves, they would be a true light to our "minds, as being the intelligible form of our understandings, and consequently perfective of them, and "indeed superior to them." If I comprehend any thing of this mysterious argument, it follows from it, that the Deity perceives nothing at all, because nothing can be superior to his understanding, or perfective of it.

There is an argument which is hinted at by MALEBRANCHE, and by several other authors, which deserves to be more seriously considered. As I find it most clearly expressed, and most fully urged by Dr SAMUEL CLARKE, I shall give it in his words, in his second reply to LEIBNITZ, sect. 4. "The soul, without being "present to the images of the things perceived, could "not possibly perceive them. A living substance can "only there perceive, where it is present, either to the "things themselves, (as the omnipresent God is to the "whole universe,) or to the images of things, as the "soul is in its proper *sensorium*."

Sir ISAAC NEWTON expresses the same sentiment, but with his usual reserve, in a query only.

The ingenious Dr PORTERFIELD, in his Essay concerning the motions of our eyes, adopts this opinion with more confidence. His words are: "How body "acts upon mind, or mind upon body, I know not; "but this I am very certain of, that nothing can act "or be acted upon, where it is not; and therefore, "our mind can never perceive any thing but its own "proper modifications, and the various states of the "sensorium, to which it is present: So that it is not "the external sun and moon which are in the heavens, "which our mind perceives, but only their image or "representation impressed upon the sensorium. How "the soul of a seeing man sees these images, or how "it receives those ideas, from such agitations in the "sensorium, I know not; but I am sure it can never "perceive the external bodies themselves, to which it "is not present."

These, indeed, are great authorities; but, in matters of philosophy, we must not be guided by authority, but by reason. Dr CLARKE, in the place cited, mentions slightly, as the reason of his opinion, that "nothing can any more act, or be acted upon, when it is "not present, than it can be where it is not." And again, in his third reply to LEIBNITZ, sect. 11. "We "are sure the soul cannot perceive what it is not present to, because nothing can act, or be acted upon, "where it is not." The same reason we see is urged by Dr PORTERFIELD.

That nothing can act immediately where it is not, I think, must be admitted; for I agree with Sir ISAAC NEWTON, that power without substance is inconceivable. It is a consequence of this, that nothing can be acted upon immediately where the agent is not present: Let this therefore be granted. To make the reasoning conclusive, it is further necessary, that, when we perceive objects, either they act upon us, or we act upon them. This does not appear self-evident, nor have I ever met with any proof of it. I shall briefly offer the reasons why I think it ought not to be admitted.

When we say that one being acts upon another, we mean that some power or force is exerted by the agent, which produces, or has a tendency to produce a change in the thing acted upon. If this be the meaning of the phrase, as I conceive it is, there appears no reason for asserting, that, in perception, either the object acts upon the mind, or the mind upon the object.

An object, in being perceived, does not act at all. I perceive the walls of the room where I sit; but they are perfectly inactive, and therefore act not upon the mind. To be perceived, is what logicians call an external denomination, which implies neither action nor quality in the object perceived. Nor could men ever have gone into this notion, that perception is owing to some action of the object upon the mind, were it not, that we are so prone to form our notions of the mind from some similitude we conceive between it and body. Thought in the mind is conceived to have some analogy to motion in a body: And as a body is put in motion, by being acted upon by some other body; so we are apt to think the mind is made to perceive, by some impulse it receives from the object. But reasonings, drawn from such analogies, ought never to be trusted. They are, indeed, the cause of most of our errors with regard to the mind. And we might as well conclude, that minds may be measured by feet and inches, or weighed by ounces and drachms, because bodies have those properties.

I see as little reason, in the second place, to believe, that in perception the mind acts upon the object. To perceive an object is one thing, to act upon it is another; nor is the last at all included in the first. To say, that I act upon the wall, by looking at it, is an abuse of language, and has no meaning. Logicians distinguish two kinds of operations of mind; the first kind produces no effect without the mind; the last does. The first they call *immanent acts*; the second *transitive*. All intellectual operations belong to the first class; they produce no effect upon any external object. But without having recourse to logical distinctions, every man of common sense knows, that to think of an object, and to act upon it, are very different things.

As we have therefore no evidence, that, in perception, the mind acts upon the object, or the object upon the mind, but strong reasons to the contrary; Dr CLARKE's argument against our perceiving external objects immediately falls to the ground.

This notion, that, in perception, the object must be contiguous to the percipient, seems, with many other prejudices, to be borrowed from analogy. In all the external senses, there must, as has been before observed, be some impression made upon the organ of sense by the object, or by something coming from the object. An impression supposes contiguity. Hence we are led by analogy to conceive something similar in the operations of the mind. Many philosophers resolve almost every operation of mind into impressions and feelings, words manifestly borrowed from the sense of touch. And it is very natural to conceive contiguity necessary between that which makes the impression, and that which receives it; between that which feels, and that which is felt. And though no philosopher will now pretend to justify such analogical reasoning as this, yet it has a powerful influence upon the judgment, while we contemplate the operations of our minds, only as they appear through the deceitful medium of such analogical notions and expressions.

When we lay aside those analogies, and reflect attentively upon our perception of the objects of sense, we must acknowledge, that, though we are conscious of perceiving objects, we are altogether ignorant how it is brought about; and know as little how we perceive objects as how we were made. And if we should admit an image in the mind, or contiguous to it, we know as little how perception may be produced by this image as by the most distant object. Why therefore should we be led, by a theory which is neither grounded on evidence, nor, if admitted, can explain any one phænomenon of perception, to reject the natural and immediate dictates of those perceptive powers, to which, in the conduct of life, we find a necessity of yielding implicit submission?

There remains only one other argument that I have been able to find urged against our perceiving external objects immediately. It is proposed by Mr HUME, who, in the Essay already quoted, after acknowledging that it is an universal and primary opinion of all men, that we perceive external objects immediately, subjoins what follows:

" But this universal and primary opinion of all men
" is soon destroyed by the slightest philosophy, which
" teaches us, that nothing can ever be present to the

" mind but an image or perception; and that the senses " are only the inlets through which these images are " received, without being ever able to produce any " immediate intercourse between the mind and the " object. The table, which we see, seems to diminish " as we remove farther from it: But the real table, " which exists independent of us, suffers no alteration. " It was therefore nothing but its image which was " present to the mind. These are the obvious dictates " of reason; and no man who reflects, ever doubted " that the existences which we consider, when we say, " *this house*, and *that tree*, are nothing but perceptions " in the mind, and fleeting copies and representations " of other existences, which remain uniform and independent. So far then, we are necessitated, by reasoning, to depart from the primary instincts of nature, and to embrace a new system, with regard to " the evidence of our senses."

We have here a remarkable conflict between two contradictory opinions, wherein all mankind are engaged. On the one side, stand all the vulgar, who are unpractised in philosophical researches, and guided by the uncorrupted primary instincts of nature. On the other side, stand all the philosophers ancient and modern; every man without exception who reflects. In this division, to my great humiliation, I find myself classed with the vulgar.

The passage now quoted is all I have found in Mr HUME's writings upon this point; and indeed there is more reasoning in it than I have found in any other author; I shall therefore examine it minutely.

First, He tells us, That " this universal and primary " opinion of all men is soon destroyed by the slightest " philosophy, which teaches us, that nothing can "ever be present to the mind but an image or perception."

The phrase of being present to the mind has some obscurity; but I conceive he means being an immediate object of thought; an immediate object, for instance, of perception, of memory, or of imagination. If this be the meaning, (and it is the only pertinent one I can think of,) there is no more in this passage but an assertion of the proposition to be proved, and an assertion that philosophy teaches it. If this be so, I beg leave to dissent from philosophy till she gives me reason for what she teaches. For though common sense and my external senses demand my assent to their dictates upon their own authority, yet philosophy is not entitled to this privilege. But that I may not dissent from so grave a personage without giving a reason, I give this as the reason of my dissent. I see the sun when he shines; I remember the battle of Culloden; and neither of these objects is an image or perception.

He tells us in the *next* place, "That the senses are "only the inlets through which these images are received."

I know that ARISTOTLE and the schoolmen taught, that images or species flow from objects, and are let in by the senses, and strike upon the mind; but this has been so effectually refuted by DES CARTES, by MALEBRANCHE, and many others, that nobody now pretends to defend it. Reasonable men consider it as one of the most unintelligible and unmeaning parts of the ancient system. To what cause is it owing that modern philosophers are so prone to fall back into this hypothesis, as if they really believed it? For of this proneness I could give many instances besides this of Mr HUME; and I take the cause to be, that images in the mind, and images let in by the senses, are so nearly allied, and so strictly connected, that they must stand or fall together. The old system consistently maintained both: But the new system has rejected the doctrine of images let in by the senses, holding, nevertheless, that there are images in the mind; and, having made this unnatural divorce of two doctrines which ought not to be put asunder, that which they have retained often leads them back involuntarily to that which they have rejected.

Mr HUME surely did not seriously believe that an image of sound is let in by the ear, an image of smell by the nose, an image of hardness and softness, of solidity and resistance, by the touch. For, besides the absurdity of the thing, which has often been shewn, Mr HUME, and all modern philosophers maintain, that the images which are the immediate objects of perception, have no existence when they are not perceived; whereas, if they were let in by the senses, they must be, before they are perceived, and have a separate existence.

He tells us further, that philosophy teaches, that the senses are unable to produce any immediate intercourse between the mind and the object. Here I still require the reasons that philosophy gives for this; for, to my apprehension, I immediately perceive external objects, and this I conceive is the immediate intercourse here meant.

Hitherto I see nothing that can be called an argument. Perhaps it was intended only for illustration. The argument, the only argument follows:

The table which we see, seems to diminish as we remove farther from it; but the real table, which exists independent of us, suffers no alteration: It was, therefore, nothing but its image which was presented to the mind. These are the obvious dictates of reason.

To judge of the strength of this argument, it is necessary to attend to a distinction which is familiar to those who are conversant in the mathematical sciences, I mean the distinction between real and apparent magnitude. The real magnitude of a line is measured by some known measure of length, as inches, feet, or miles: The real magnitude of a surface or solid, by known measures, of surface or of capacity. This magnitude is an object of touch only, and not of sight; nor could we even have had any conception of it, without the sense of touch; and Bishop BERKELEY, on that account, calls it *tangible magnitude*.

Apparent magnitude is measured by the angle which an object subtends at the eye. Supposing two right lines drawn from the eye to the extremities of the object, making an angle, of which the object is the subtense, the apparent magnitude is measured by this angle. This apparent magnitude is an object of sight, and not of touch. Bishop BERKELEY calls it *visible magnitude*.

If it be asked, What is the apparent magnitude of the sun's diameter? the answer is, That it is about thirty-one minutes of a degree. But if it be asked, What is the real magnitude of the sun's diameter? The answer must be, So many thousand miles, or so many diameters of the earth. From which it is evident, that real magnitude, and apparent magnitude, are things of a different nature, though the name of magnitude is given to both. The first has three dimensions, the last only two. The first is measured by a line, the last by an angle.

From what has been said, it is evident that the real magnitude of a body must continue unchanged, while the body is unchanged. This we grant. But it is likewise evident, that the apparent magnitude must continue the same while the body is unchanged. So far otherwise, that every man who knows any thing of mathematics can easily demonstrate, that the same individual object, remaining in the same place, and unchanged, must necessarily vary in its apparent magnitude, according as the point from which it is seen is more or less distant; and that its apparent length or breadth will be nearly in a reciprocal proportion to the distance of the spectator. This is as certain as the principles of geometry.

We must likewise attend to this, that though the real magnitude of a body is not originally an object of sight, but of touch, yet we learn by experience to judge of the real magnitude in many cases by sight. We learn by experience to judge of the distance of a body from the eye within certain limits; and from its distance and apparent magnitude taken together, we learn to judge of its real magnitude.

And this kind of judgment, by being repeated every hour, and almost every minute of our lives, becomes, when we are grown up, so ready and so habitual, that it very much resembles the original perceptions of our senses, and may not improperly be called *acquired perception.*

Whether we call it judgment or acquired perception is a verbal difference. But it is evident, that, by means of it, we often discover by one sense things which are properly and naturally the objects of another. Thus I can say without impropriety, I hear a drum, I hear a great bell, or I hear a small bell; though it is certain that the figure or size of the sounding body is not originally an object of hearing. In like manner, we learn by experience how a body of such a real magnitude, and at such a distance, appears to the eye: But neither its real magnitude, nor its distance from the eye, are properly objects of sight, any more than the form of a drum, or the size of a bell, are properly objects of hearing.

If these things be considered, it will appear, that Mr HUME's argument hath no force to support his conclusion, nay, that it leads to a contrary conclusion. The argument is this, The table we see, seems to diminish as we remove farther from it; that is, its apparent magnitude is diminished; but the real table suffers no alteration, to wit, in its real magnitude; therefore it is not the real table we see: I admit both the premises in this syllogism, but I deny the conclusion. The syllogism has what the logicians call two middle terms: Apparent magnitude is the middle term in the first premise; real magnitude in the second. Therefore, according to the rules of logic, the conclusion is not justly drawn from the premises; but, laying aside the rules of logic, let us examine it by the light of common sense.

Let us suppose, for a moment, that it is the real table we see: Must not this real table seem to diminish as we remove farther from it? It is demonstrable that it must. How then can this apparent diminution be an argument that it is not the real table? When that which must happen to the real table, as we remove farther from it, does actually happen to the table we see, it is absurd to conclude from this, that it is not the real table we see. It is evident, therefore, that this ingenious author has imposed upon himself, by confounding real magnitude with apparent magnitude, and that his argument is a mere sophism.

I observed that Mr HUME's argument, not only has no strength to support his conclusion, but that it leads to the contrary conclusion; to wit, that it is the real table we see; for this plain reason, that the table we see has precisely that apparent magnitude which it is demonstrable the real table must have when placed at that distance.

The argument is made much stronger by considering, that the real table may be placed successively at a thousand different distances, and in every distance, in a thousand different positions; and it can be determined demonstratively, by the rules of geometry and perspective, what must be its apparent magnitude, and apparent figure, in each of those distances and positions. Let the table be placed successively in as many of these different distances, and different positions, as you will, or in them all; open your eyes, and you shall see a table precisely of that apparent magnitude, and that apparent figure, which the real table must have in that distance, and in that position. Is not this a strong argument that it is the real table you see?

In a word, the appearance of a visible object is infinitely diversified, according to its distance and position. The visible appearances are innumerable, when we confine ourselves to one object, and they are multiplied according to the variety of objects. Those appearances have been matter of speculation to ingenious men, at least since the time of EUCLID. They have accounted for all this variety, on the supposition, that the objects we see are external, and not in the mind itself. The rules they have demonstrated about the various projections of the sphere, about the appearances of the planets in their progressions, stations, and retrogradations, and all the rules of perspective, are built on the supposition that the objects of sight are external. They can each of them be tried in thousands of instances. In many arts and professions, innumerable trials are daily made; nor were they ever found to fail in a single instance. Shall we say that a false supposition, invented by the rude vulgar, has been so lucky in solving an infinite number of phænomena of nature? This surely would be a greater prodigy than philosophy ever exhibited: Add to this, that upon the contrary hypothesis, to wit, that the objects of sight are internal, no account can be given of any one of those appearances, nor any physical cause assigned why a visible object should, in any one case, have one apparent figure and magnitude rather than another.

Thus I have considered every argument I have found advanced to prove the existence of ideas or images of external things, in the mind: And if no better arguments can be found, I cannot help thinking, that the whole history of philosophy has never furnished an instance of an opinion so unanimously entertained by philosophers upon so slight grounds.

A *third* reflection I would make upon this subject is, That philosophers, notwithstanding their unanimity as to the existence of ideas, hardly agree in any one thing else concerning them. If ideas be not a mere fiction, they must be, of all objects of human knowledge, the things we have best access to know, and to be acquainted with; yet there is nothing about which men differ so much.

Some have held them to be self-existent, others to be in the Divine mind, others in our own minds, and others in the brain or *sensorium*: I considered the hypotheses of images in the brain, in the fourth chapter of this Essay. As to images in the mind, if any thing more is meant by the image of an object in the mind than the thought of that object, I know not what it means. The distinct conception of an object may, in a metaphorical or analogical sense, be called an *image* of it in the mind. But this image is only the conception of the object, and not the object conceived. It is an act of the mind, and not the object of that act.

Some philosophers will have our ideas, or a part of them, to be innate; others will have them all to be adventitious: Some derive them from the senses alone; others from sensation and reflection: Some think they are fabricated by the mind itself; others that they are produced by external objects; others that they are the immediate operation of the Deity; others say, that impressions are the causes of ideas, and that the causes of impressions are unknown: Some think that we have ideas only of material objects, but none of minds, of their operations, or of the relations of things; others will have the immediate object of every thought to be an idea: Some think we have abstract ideas, and that by this chiefly we are distinguished from the brutes; others maintain an abstract idea to be an absurdity, and that there can be no such thing: With some they are the immediate objects of thought, with others, the only objects.

A *fourth* reflection is, That ideas do not make any of the operations of the mind to be better understood, although it was probably with that view that they have been first invented, and afterwards so generally received.

We are at a loss to know how we perceive distant objects; how we remember things past; how we imagine things that have no existence. Ideas in the mind seem to account for all these operations: They are all by the means of ideas reduced to one operation; to a kind of feeling, or immediate perception of things present, and in contact with the percipient; and feeling is an operation so familiar, that we think it needs no explication, but may serve to explain other operations.

But this feeling, or immediate perception, is as difficult to be comprehended, as the things which we pretend to explain by it. Two things may be in contact without any feeling or perception; there must therefore be in the percipient a power to feel or to perceive. How this power is produced, and how it operates, is quite beyond the reach of our knowledge. As little can we know whether this power must be limited to things present, and in contact with us. Nor can any man pretend to prove, that the Being who gave us the power to perceive things present, may not give us the power to perceive things that are distant, to remember things past, and to conceive things that never existed.

Some philosophers have endeavoured to make all our senses to be only different modifications of touch; a theory which serves only to confound things that are different, and to perplex and darken things that are clear. The theory of ideas resembles this, by reducing all the operations of the human understanding to the perception of ideas in our own minds.. This power of perceiving ideas is as inexplicable as any of the powers explained by it: And the contiguity of the object contributes nothing at all to make it better understood; because there appears no connection between contiguity and perception, but what is grounded on prejudices, drawn from some imagined similitude between mind and body; and from the supposition, that, in perception, the object acts upon the mind, or the mind upon the object. We have seen how this theory has led philosophers to confound those operations of mind which experience teaches all men to be different, and teaches them to distinguish in common language; and that it has led them to invent a language inconsistent with the principles upon which all language is grounded.

The *last* reflection I shall make upon this theory is, That the natural and necessary consequences of it furnish a just prejudice against it to every man who pays a due regard to the common sense of mankind.

Not to mention, that it led the Pythagoreans and PLATO to imagine that we see only the shadows of external things, and not the things themselves, and that it gave rise to the Peripatetic doctrine of sensible *species*, one of the greatest absurdities of that ancient system, let us only consider the fruits it has produced, since it was new modelled by DES CARTES. That great reformer in philosophy saw the absurdity of the doctrine of ideas coming from external objects, and refuted it effectually, after it had been received by philosophers for thousands of years; but he still retained ideas in the brain and in the mind. Upon this foundation, all our modern systems of the powers of the mind are built. And the tottering state of those fabrics, though built by skilful hands, may give a strong suspicion of unsoundness of the foundation.

It was this theory of ideas that led DES CARTES, and those that followed him, to think it necessary to prove, by philosophical arguments, the existence of material objects. And who does not see that philosophy must make a very ridiculous figure in the eyes of sensible men, while it is employed in mustering up metaphysical arguments, to prove that there is a sun and a moon, an earth and a sea: Yet we find these truly great men, DES CARTES, MALEBRANCHE, ARNAULD, and LOCKE, seriously employing themselves in this argument.

Surely their principles led them to think, that all men, from the beginning of the world, believed the existence of these things upon insufficient grounds, and to think that they would be able to place upon a more rational foundation this universal belief of mankind. But the misfortune is, that all the laboured arguments they have advanced, to prove the existence of those things we see and feel, are mere sophisms: Not one of them will bear examination.

I might mention several paradoxes, which Mr LOCKE, though by no means fond of paradoxes, was led into by this theory of ideas. Such as, that the secondary qualities of body are no qualities of body at all, but sensations of the mind: That the primary qualities of body are resemblances of our sensations: That we have no notion of duration, but from the succession of ideas in our minds: That personal identity consists in consciousness; so that the same individual thinking being may make two or three different persons, and several different thinking beings make one person: That judgment is nothing but a perception of the agreement or disagreement of our ideas. Most of these paradoxes I shall have occasion to examine.

However, all these consequences of the doctrine of ideas were tolerable, compared with those which came afterwards to be discovered by BERKELEY and HUME: That there is no material world: No abstract ideas or notions: That the mind is only a train of related impressions and ideas, without any subject on which they may be impressed: That there is neither space nor time, body nor mind, but impressions and ideas only: And, to sum up all, That there is no probability, even in demonstration itself, nor any one proposition more probable than its contrary.

These are the noble fruits which have grown upon this theory of ideas, since it began to be cultivated by skilful hands. It is no wonder that sensible men should be disgusted at philosophy, when such wild and shocking paradoxes pass under its name. However, as these paradoxes have, with great acuteness and ingenuity, been deduced by just reasoning from the theory of ideas, they must at last bring this advantage, that positions so shocking to the common sense of mankind, and so contrary to the decisions of all our intellectual powers, will open mens eyes, and break the force of the prejudice which hath held them entangled in that theory.

CHAP. XV.

Account of the System of LEIBNITZ.

THERE is yet another system concerning perception, of which I shall give some account, because of the fame of its author. It is the invention of the famous German philosopher LEIBNITZ, who, while he lived, held the first rank among the Germans in all parts of philosophy, as well as in mathematics, in jurisprudence, in the knowledge of antiquities, and in every branch, both of science and of literature. He was highly respected by emperors, and by many kings and princes, who bestowed upon him singular marks of their esteem. He was a particular favourite of our Queen CAROLINE, consort of GEORGE II. with whom he continued his correspondence by letters after she came to the Crown of Britain, till his death.

The famous controversy between him and the British mathematicians, whether he or Sir ISAAC NEWTON was the inventor of that noble improvement in mathematics, called by NEWTON *the method of fluxions*, and by LEIBNITZ *the differential method*, engaged the attention of the mathematicians in Europe for several years.

He had likewise a controversy with the learned and judicious Dr SAMUEL CLARKE, about several points of the Newtonian philosophy which he disapproved. The papers which gave occasion to this controversy, with all the replies and rejoinders, had the honour to be transmitted from the one party to the other through the hands of Queen CAROLINE, and were afterwards published.

His authority, in all matters of philosophy, is still so great in most parts of Germany, that they are considered as bold spirits, and a kind of heretics, who dissent from him in any thing. WOLFIUS, the most voluminous writer in philosophy of this age, is considered as the great interpreter and advocate of the Leibnitzian system, and reveres as an oracle whatever has dropped from the pen of LEIBNITZ. This author proposed two great works upon the mind. The first, which I have seen, he published with the title of *Psychologia empirica, seu experimentalis.* The other was to have the title of *Psychologia rationalis;* and to it he refers for his explication of the theory of LEIBNITZ with regard to the mind. But whether it was published I have not learned.

I must therefore take the short account I am to give of this system from the writings of LEIBNITZ himself, without the light which his interpreter WOLFIUS may have thrown upon it.

LEIBNITZ conceived the whole universe, bodies as well as minds, to be made up of monads, that is, simple substances, each of which is, by the Creator in the beginning of its existence, endowed with certain active and perceptive powers. A monad, therefore, is an active substance, simple, without parts or figure, which has within itself the power to produce all the changes it undergoes from the beginning of its existence to eternity. The changes which the monad undergoes, of what kind soever, though they may seem to us the effect of causes operating from without, yet they are only the gradual and successive evolutions of its own internal powers, which would have produced all the same changes and motions, although there had been no other being in the universe.

Every human soul is a monad joined to an organised body, which organised body consists of an infinite number of monads, each having some degree of active and of perceptive power in itself. But the whole machine of the body has a relation to that monad which we call the soul, which is, as it were, the centre of the whole.

As the universe is completely filled with monads, without any chasm or void, and thereby every body acts upon every other body, according to its vicinity or distance, and is mutually re-acted upon by every other body, it follows, says LEIBNITZ, that every monad is a kind of living mirror, which reflects the whole universe, according to its point of view, and represents the whole more or less distinctly.

I cannot undertake to reconcile this part of the system with what was before mentioned, to wit, that every change in a monad is the evolution of its own original powers, and would have happened though no other substance had been created. But to proceed.

There are different orders of monads, some higher, and others lower. The higher orders he calls dominant; such is the human soul. The monads that compose the organised bodies of men, animals and plants, are of a lower order, and subservient to the dominant monads. But every monad of whatever order, is a complete substance in itself, indivisible, having no parts, indestructable, because, having no parts, it cannot perish by any kind of decomposition; it can only perish by annihilation, and we have no reason to believe that God will ever annihilate any of the beings which he has made.

The monads of a lower order may, by a regular evolution of their powers, rise to a higher order. They may successively be joined to organised bodies, of various forms and different degrees of perception; but they never die, nor cease to be in some degree active and percipient.

This philosopher makes a distinction between perception and what he calls *apperception.* The first is common to all monads, the last proper to the higher orders, among which are human souls.

By apperception he understands that degree of perception which reflects, as it were, upon itself; by which we are conscious of our own existence, and conscious of our perceptions; by which we can reflect upon the operations of our own minds, and can comprehend abstract truths. The mind, in many operations, he thinks, particularly in sleep, and in many actions common to us with the brutes, has not this apperception, although it is still filled with a multitude of obscure and indistinct perceptions, of which we are not conscious.

He conceives that our bodies and minds are united in such a manner, that neither has any physical influence upon the other. Each performs all its operations by its own internal springs and powers; yet the operations of one correspond exactly with those of the other, by a pre-established harmony; just as one clock may be so adjusted as to keep time with another, although each has its own moving power, and neither receives any part of its motion from the other.

So that, according to this system, all our perceptions of external objects would be the same, though external things had never existed; our perception of them would continue, although, by the power of God, they should this moment be annihilated: We do not perceive external things because they exist, but because the soul was originally so constituted as to produce in itself all its successive changes, and all its successive perceptions, independently of the external objects.

Every perception or apperception, every operation, in a word, of the soul, is a necessary consequence of the state of it immediately preceding that operation; and this state is the necessary consequence of the state preceding it; and so backwards, until you come to its first formation and constitution, which produces successively, and by necessary consequence, all its successive states to the end of its existence: So that in this respect the soul, and every monad, may be compared to a watch wound up, which having the spring of its motion in itself, by the gradual evolution of its own spring, produces all the successive motions we observe in it.

In this account of LEIBNITZ's system concerning monads, and the pre-established harmony, I have kept as nearly as I could to his own expressions, in his *new system of the nature and communication of substances, and of the union of soul and body*; and in the several illustrations of that new system which he afterwards published; and in his *principles of nature and grace founded in reason.* I shall now make a few remarks upon this system.

1. To pass over the irresistible necessity of all human actions, which makes a part of this system, that will be considered in another place, I observe first, that the distinction made between perception and apperception is obscure and unphilosophical: As far as

we can discover, every operation of our mind is attended with consciousness, and particularly that which we call the perception of external objects; and to speak of a perception of which we are not conscious, is to speak without any meaning.

As consciousness is the only power by which we discern the operations of our own minds, or can form any notion of them, an operation of mind of which we are not conscious, is, we know not what; and to call such an operation by the name of perception, is an abuse of language. No man can perceive an object, without being conscious that he perceives it. No man can think without being conscious that he thinks. What men are not conscious of, cannot therefore, without impropriety, be called either perception or thought of any kind. And if we will suppose operations of mind, of which we are not conscious, and give a name to such creatures of our imagination, that name must signify what we know nothing about.

2. To suppose bodies organised or unorganised, to be made up of indivisible monads which have no parts, is contrary to all that we know of body. It is essential to a body to have parts; and every part of a body, is a body, and has parts also. No number of parts, without extension or figure, not even an infinite number, if we may use that expression, can, by being put together, make a whole that has extension and figure, which all bodies have.

3. It is contrary to all that we know of bodies, to ascribe to the monads, of which they are supposed to be compounded, perception and active force. If a philosopher thinks proper to say, that a clod of earth both perceives and has active force, let him bring his proofs. But he ought not to expect, that men who

have understanding, will so far give it up as to receive without proof whatever his imagination may suggest.

4. This system overturns all authority of our senses, and leaves not the least ground to believe the existence of the objects of sense, or the existence of any thing which depends upon the authority of our senses; for our perception of objects, according to this system, has no dependence upon any thing external, and would be the same as it is, supposing external objects had never existed, or that they were from this moment annihilated.

It is remarkable that LEIBNITZ's system, that of MALEBRANCHE, and the common system of ideas, or images of external objects in the mind, do all agree in overturning all the authority of our senses; and this one thing, as long as men retain their senses, will always make all these systems truly ridiculous.

5. The last observation I shall make upon this system, which indeed is equally applicable to all the systems of perception I have mentioned, is, that it is all hypothesis, made up of conjectures and suppositions, without proof. The Peripatetics supposed sensible *species* to be sent forth by the objects of sense. The moderns suppose ideas in the brain, or in the mind. MALEBRANCHE supposed, that we perceive the ideas of the Divine mind. LEIBNITZ supposed monads and a pre-established harmony; and these monads being creatures of his own making, he is at liberty to give them what properties and powers his fancy may suggest. In like manner, the Indian philosopher supposed that the earth is supported by a huge elephant, and that the elephant stands on the back of a huge tortoise.

Such suppositions, while there is no proof of them offered, are nothing but the fictions of human fancy; and we ought no more to believe them, than we believe HOMER's fictions of APOLLO's silver bow, or MINERVA's shield, or VENUS's girdle. Such fictions in poetry are agreeable to the rules of the art: They are intended to please, not to convince. But the philosophers would have us to believe their fictions though the account they give of the phænomena of nature has commonly no more probability than the account that HOMER gives of the plague in the Grecian camp, from APOLLO taking his station on a neighbouring mountain, and from his silver bow, letting fly his swift arrows into the camp.

Men then only begin to have a true taste in philosophy, when they have learned to hold hypotheses in just contempt; and to consider them as the reveries of speculative men, which will never have any similitude to the works of God.

The Supreme Being has given us some intelligence of his work, by what our senses inform us of external things, and by what our consciousness and reflection inform us concerning the operations of our own minds. Whatever can be inferred from these common informations, by just and sound reasoning, is true and legitimate philosophy: But what we add to this from conjecture is all spurious and illegitimate.

After this long account of the theories advanced by philosophers, to account for our perception of external objects, I hope it will appear, that neither ARISTOTLE's theory of sensible species, nor MALEBRANCHE's, of our seeing things in God, nor the common theory of our perceiving ideas in our own minds, nor LEIBNITZ's theory of monads, and a pre-established harmony, give any satisfying account of this power of the mind, or make it more intelligible than it is without their aid. They are conjectures, and if they were true, would solve no difficulty, but raise many new ones. It is herefore more agreeable to good sense, and to sound philosophy, to rest satisfied with what our consciousness and attentive reflection discover to us of the nature of perception, than by inventing hypotheses, to attempt to explain things which are above the reach of human understanding. I believe no man is able to explain how we perceive external objects, any more than how we are conscious of those that are internal. Perception, consciousness, memory, and imagination, are all original and simple powers of the mind, and parts of its constitution. For this reason, though I have endeavoured to shew, that the theories of philosophers on this subject are ill-grounded and insufficient, I do not attempt to substitute any other theory in their place.

Every man feels that perception gives him an invincible belief of the existence of that which he perceives; and that this belief is not the effect of reasoning, but the immediate consequence of perception. When Philosophers have wearied themselves and their readers with their speculations upon this subject, they can neither strengthen this belief, nor weaken it; nor can they shew how it is produced. It puts the philosopher and the peasant upon a level; and neither of them can give any other reason for believing his senses, than that he finds it impossible for him to do otherwise.

CHAP. XVI.

Of Sensation.

HAVING finished what I intend, with regard to that act of mind which we call the perception of an external object, I proceed to consider another, which, by our constitution, is conjoined with perception, and not with perception only, but with many other acts of our minds; and that is sensation. To prevent repetition, I must refer the reader to the explication of this word given in Essay I. chap. 1.

Almost all our perceptions have corresponding sensations which constantly accompany them, and, on that account, are very apt to be confounded with them. Neither ought we to expect, that the sensation, and its corresponding perception, should be distinguished in common language, because the purposes of common life do not require it. Language is made to serve the purposes of ordinary conversation; and we have no reason to expect that it should make distinctions that are not of common use. Hence it happens, that a quality perceived, and the sensation corresponding to that perception, often go under the same name.

This makes the names of most of our sensations ambiguous, and this ambiguity hath very much perplexed philosophers. It will be necessary to give some instances, to illustrate the distinction between our sensations and the objects of perception.

When I smell a rose, there is in this operation both sensation and perception. The agreeable odour I feel considered by itself, without relation to any external object, is merely a sensation. It affects the mind in a certain way; and this affection of the mind may be conceived, without a thought of the rose, or any other object. This sensation can be nothing else than it is felt to be. Its very essence consists in being felt; and when it is not felt, it is not. There is no difference between the sensation and the feeling of it; they are one and the same thing. It is for this reason, that we before observed, that, in sensation, there is no object distinct from that act of the mind by which it is felt; and this holds true with regard to all sensations.

Let us next attend to the perception which we have in smelling a rose. Perception has always an external object; and the object of my perception, in this case, is that quality in the rose which I discern by the sense of smell. Observing that the agreeable sensation is raised when the rose is near, and ceases when it is removed, I am led, by my nature, to conclude some quality to be in the rose, which is the cause of this sensation. This quality in the rose is the object perceived; and that act of my mind, by which I have the conviction and belief of this quality, is what in this case I call perception.

But it is here to be observed, that the sensation I feel, and the quality in the rose which I perceive, are both called by the same name. The smell of a rose is the name given to both: So that this name hath two meanings; and the distinguishing its different meanings removes all perplexity, and enables us to give clear and distinct answers to questions, about which philosophers have held much dispute.

Thus, if it is asked, whether the smell be in the rose, or in the mind that feels it? The answer is obvious: That there are two different things signified by the smell of a rose; one of which is in the mind, and can be in nothing but in a sentient being; the other is truly and properly in the rose. The sensation which I feel is in my mind. The mind is the sentient being; and as the rose is insentient, there can be no sensation, nor any thing resembling sensation in it. But this sensation in my mind is occasioned by a certain quality in the rose, which is called by the same name with the sensation, not on account of any similitude, but because of their constant concomitancy.

All the names we have for smells, tastes, sounds, and for the various degrees of heat and cold, have a like ambiguity; and what has been said of the smell of a rose may be applied to them. They signify both a sensation, and a quality perceived by means of that sensation. The first is the sign, the last the thing signified. As both are conjoined by nature, and as the purposes of common life do not require them to be disjoined in our thoughts, they are both expressed by the same name: And this ambiguity is to be found in all languages, because the reason of it extends to all.

The same ambiguity is found in the names of such diseases as are indicated by a particular painful sensation; Such as the tooth-ach, the head-ach. The tooth-ach signifies a painful sensation, which can only be in a sentient being; but it signifies also a disorder in the body, which has no similitude to a sensation, but is naturally connected with it.

Pressing my hand with force against the table, I feel pain, and I feel the table to be hard. The pain is a sensation of the mind, and there is nothing that resembles it in the table. The hardness is in the table, nor is there any thing resembling it in the mind. Feeling is applied to both; but in a different sense; being a word common to the act of sensation, and to that of perceiving by the sense of touch.

I touch the table gently with my hand, and I feel it to be smooth, hard, and cold. These are qualities of the table perceived by touch; but I perceive them by means of a sensation which indicates them. This sensation not being painful, I commonly give no attention to it. It carries my thought immediately to the thing signified by it, and is itself forgot, as if it had never been. But by repeating it, and turning my attention to it, and abstracting my thought from the thing signified by it, I find it to be merely a sensation, and that it has no similitude to the hardness, smoothness, or coldness of the table which are signified by it.

It is indeed difficult, at first, to disjoin things in our ttention which have always been conjoined, and to nake that an object of reflection which never was so efore; but some pains and practice will overcome this ifficulty in those who have got the habit of reflecting n the operations of their own minds.

Although the present subject leads us only to conider the sensations which we have by means of our xternal senses, yet it will serve to illustrate what has een said, and I apprehend is of importance in itself o observe, that many operations of mind, to which we ive one name, and which we always consider as one hing, are complex in their nature, and made up of seeral more simple ingredients; and of these ingredients ensation very often makes one. Of this we shall give ome instances.

The appetite of hunger includes an uneasy sensation, nd desire of food. Sensation and desire are different cts of mind. The last, from its nature, must have an bject; the first has no object. These two ingreients may always be separated in thought; perhaps hey sometimes are, in reality; but hunger includes oth.

Benevolence towards our fellow-creatures includes n agreeable feeling; but it includes also a desire of he happiness of others. The ancients commonly calld it desire: Many moderns choose rather to call it a eeling. Both are right; and they only err who exlude either of the ingredients. Whether these two ngredients are necessarily connected, is perhaps dificult for us to determine, there being many necessary onnections which we do not perceive to be necessary; ut we can disjoin them in thought. They are different cts of the mind.

An uneasy feeling, and a desire, are in like manner the ingredients of malevolent affections; such as malice, envy, revenge. The passion of fear includes an uneasy sensation or feeling, and an opinion of danger; and hope is made up of the contrary ingredients. When we hear of a heroic action, the sentiment which it raises in our mind is made up of various ingredients. There is in it an agreeable feeling, a benevolent affection to the person, and a judgment or opinion of his merit.

If we thus analyse the various operations of our minds, we shall find, that many of them which we consider as perfectly simple, because we have been accustomed to call them by one name, are compounded of more simple ingredients; and that sensation, or feeling, which is only a more refined kind of sensation, makes one ingredient, not only in the perception of external objects, but in most operations of the mind.

A small degree of reflection may satisfy us, that the number and variety of our sensations and feelings is prodigious: For, to omit all those which accompany our appetites, passions, and affections, our moral sentiments, and sentiments of taste, even our external senses furnish a great variety of sensations differing in kind, and almost in every kind an endless variety of degrees. Every variety we discern, with regard to taste, smell, sound, colour, heat and cold, and in the tangible qualities of bodies, is indicated by a sensation corresponding to it.

The most general and the most important division of our sensations and feelings, is into the agreeable, the disagreeable, and the indifferent. Every thing we call pleasure, happiness, or enjoyment, on the one hand; and on the other, every thing we call misery, pain, or uneasiness, is sensation or feeling: For no man can for the present be more happy, or more miserable than he feels himself to be. He cannot be deceived with regard to the enjoyment or suffering, of the present moment.

But I apprehend, that besides the sensations that are either agreeable or disagreeable, there is still a greater number that are indifferent. To these we give so little attention that they have no name, and are immediately forgot as if they had never been; and it requires attention to the operations of our minds to be convinced of their existence.

For this end we may observe, that to a good ear every human voice is distinguishable from all others. Some voices are pleasant, some disagreeable; but the far greater part can neither be said to be one or the other. The same thing may be said of other sounds, and no less of tastes, smells, and colours; and if we consider that our senses are in continual exercise while we are awake, that some sensation attends every object they present to us, and that familiar objects seldom raise any emotion pleasant or painful, we shall see reason, besides the agreeable and disagreeable, to admit a third class of sensations, that may be called indifferent.

The sensations that are indifferent, are far from being useless. They serve as signs to distinguish things that differ; and the information we have concerning things external, comes by their means. Thus, if a man had no ear to receive pleasure from the harmony or melody of sounds, he would still find the sense of hearing of great utility: Though sounds gave him neither pleasure nor pain of themselves, they would give him much useful information; and the like may be said of the sensations we have by all the other senses.

As to the sensations and feelings that are agreeable or disagreeable, they differ much, not only in degree, but in kind and in dignity. Some belong to the animal part of our nature, and are common to us with the brutes: Others belong to the rational and moral part. The first are more properly called *sensations*, the last *feelings*. The French word *sentiment* is common to both.

The intention of nature in them is for the most part obvious, and well deserving our notice. It has been beautifully illustrated by a very elegant French writer, in his *Theorie des sentiments agreeables*.

The author of Nature, in the distribution of agreeable and painful feelings, hath wisely and benevolently consulted the good of the human species, and hath even shewn us, by the same means, what tenor of conduct we ought to hold. For, *first*, The painful sensations of the animal kind are admonitions to avoid what would hurt us; and the agreeable sensations of this kind, invite us to those actions that are necessary to the preservation of the individual, or of the kind. *Secondly*, By the same means nature invites us to moderate bodily exercises, and admonishes us to avoid idleness and inactivity on the one hand, and excessive labour and fatigue on the other. *Thirdly*, The moderate exercise of all our rational powers gives pleasure. *Fourthly*, Every species of beauty is beheld with pleasure, and every species of deformity with disgust; and we shall find all that we call beautiful, to be something estimable or useful in itself, or a sign of something that is estimable or useful. *Fifthly*, The benevolent affections are all accompanied with an agreeable feeling, the malevolent with the contrary. And, *sixthly*, The highest, the noblest, and most durable pleasure, is that of doing well, and acting the part that becomes us; and the most bitter and painful sentiment, the anguish and remorse of a guilty conscience. These observations with regard to the œconomy of Nature in the distribution of our painful and agreeable sensations and feelings, are illustrated by the author last mentioned, so elegantly and judiciously, that I shall not attempt to say any thing upon them after him.

I shall conclude this chapter by observing, that as the confounding our sensations with that perception of external objects, which is constantly conjoined with them, has been the occasion of most of the errors and false theories of philosophers with regard to the senses; so the distinguishing these operations seems to me to be the key that leads to a right understanding of both.

Sensation, taken by itself, implies neither the conception nor belief of any external object. It supposes a sentient being, and a certain manner in which that being is affected; but it supposes no more. Perception implies an immediate conviction and belief of something external; something different both from the mind that perceives, and from the act of perception. Things so different in their nature ought to be distinguished; but by our constitution they are always united. Every different perception is conjoined with a sensation that is proper to it. The one is the sign, the other the thing signified. They coalesce in our imagination. They are signified by one name, and are considered as one simple operation. The purposes of life do not require them to be distinguished.

It is the philosopher alone who has occasion to distinguish them, when he would analyse the operation compounded of them. But he has no suspicion that there is any composition in it; and to discover this requires a degree of reflection which has been too little practised even by philosophers.

In the old philosophy, sensation and perception were perfectly confounded. The sensible species coming from the object, and impressed upon the mind, was the whole; and you might call it sensation or perception as you pleased.

Des Cartes and Locke, attending more to the operations of their own minds, say, That the sensations by which we have notice of secondary qualities, have no resemblance to any thing that pertains to body; but they did not see that this might with equal justice be applied to the primary qualities. Mr Locke maintains, that the sensations we have from primary qualities are resemblances of those qualities. This shews how grossly the most ingenious men may err with regard to the operations of their minds. It must indeed be acknowledged, that it is much easier to have a distinct notion of the sensations that belong to secondary, than of those that belong to the primary qualities. The reason of this will appear in the next chapter.

But had Mr Locke attended with sufficient accuracy to the sensations which he was every day and every hour receiving from primary qualities, he would have seen, that they can as little resemble any quality of an inanimated being, as pain can resemble a cube or a circle.

What had escaped this ingenious philosopher was clearly discerned by Bishop Berkeley. He had a just notion of sensations, and saw that it was impossible that any thing in an insentient being could resemble them; a thing so evident in itself that it seems wonderful that it should have been so long unknown.

But let us attend to the consequence of this discovery. Philosophers, as well as the vulgar, had been accustomed to comprehend both sensation and perception under one name, and to consider them as one uncompounded operation. Philosophers, even more than the vulgar, gave the name of sensation to the whole operation of the senses; and all the notions we have of material things were called ideas of sensation. This led Bishop BERKELEY to take one ingredient of a complex operation for the whole; and having clearly discovered the nature of sensation, taking it for granted, that all that the senses present to the mind is sensation, which can have no resemblance to any thing material he concluded that there is no material world.

If the senses furnished us with no materials of thought but sensations, his conclusion must be just; for no sensation can give us the conception of material things, far less any argument to prove their existence. But if it is true that by our senses we have not only a variety of sensations, but likewise a conception, and an immediate natural conviction of external objects, he reasons from a false supposition, and his arguments fall to the ground.

CHAP. XVII.

Of the Objects of Perception; and first, Of Primary and Secondary Qualities.

THE objects of perception are the various qualities of bodies. Intending to treat of these only in general, and chiefly with a view to explain the notions which our senses give us of them, I begin with the distinction between primary and secondary qualities. These were distinguished very early. The Peripatetic system confounded them, and left no difference. The distinction was again revived by DES CARTES and LOCKE, and a second time abolished by BERKELEY and HUME. If the real foundation of this distinction can be pointed out, it will enable us to account for the various revolutions in the sentiments of philosophers concerning it.

Every one knows that extension, divisibility, figure, motion, solidity, hardness, softness, and fluidity, were by Mr Locke called *primary qualities of body;* and that sound, colour, taste, smell, and heat or cold, were called *secondary qualities.* Is there a just foundation for this distinction? Is there any thing common to the primary which belongs not to the secondary? And what is it?

I answer, That there appears to me to be a real foundation for the distinction; and it is this: That our senses give us a direct and a distinct notion of the primary qualities, and inform us what they are in themselves: But of the secondary qualities, our senses give us only a relative and obscure notion. They inform us only, that they are qualities that affect us in a certain manner, that is, produce in us a certain sensation; but as to what they are in themselves our senses leave us in the dark.

Every man capable of reflection may easily satisfy himself, that he has a perfectly clear and distinct notion of extension, divisibility, figure, and motion. The solidity of a body means no more, but that it excludes other bodies from occupying the same place at the same time. Hardness, softness, and fluidity, are different degrees of cohesion in the parts of a body. It is fluid, when it has no sensible cohesion; soft when the cohesion is weak; and hard when it is strong: Of the cause of this cohesion we are ignorant, but the thing itself we understand perfectly, being immediately informed of it by the sense of touch. It is evident, therefore, that of the primary qualities we have a clear and distinct notion; we know what they are, though we may be ignorant of their causes.

I observed further, that the notion we have of primary qualities is direct, and not relative only. A relative notion of a thing, is, strictly speaking, no notion of the thing at all, but only of some relation which it bears to something else.

Thus gravity sometimes signifies the tendency of bodies towards the earth; sometimes it signifies the cause of that tendency: When it means the first, I have a direct and distinct notion of gravity: I see it, and feel it, and know perfectly what it is; but this tendency must have a cause: We give the same name to the cause; and that cause has been an object of thought and of speculation. Now what notion have we of this cause when we think and reason about it? It is evident, we think of it as an unknown cause, of a known effect. This is a relative notion, and it must be obscure, because it gives us no conception of what the thing is, but of what relation it bears to something else. Every relation which a thing unknown bears to something that is known, may give a relative notion of it; and there are many objects of thought, and of discourse, of which our faculties can give no better than a relative notion.

Having premised these things to explain what is meant by a relative notion, it is evident, that our notion of primary qualities is not of this kind; we know what they are, and not barely what relation they bear to something else.

It is otherwise with secondary qualities. If you ask me, what is that quality or modification in a rose which I call its smell, I am at a loss to answer directly. Upon reflection I find, that I have a distinct notion of the sensation which it produces in my mind. But there can be nothing like to this sensation in the rose, because it is insentient. The quality in the rose is something which occasion the sensations in me; but what that something is, I know not. My senses give me no information upon this point. The only notion therefore my senses give is this, That smell in the rose is an unknown quality or modification, which is the cause or occasion of a sensation which I know well. The relation which this unknown quality bears to the sensation with which nature hath connected it, is all I learn from the sense of smelling; but this is evidently a relative notion. The same reasoning will apply to every secondary quality.

Thus I think it appears, that there is a real foundation for the distinction of primary from secondary qualities; and that they are distinguished by this, that of the primary we have by our senses a direct and distinct notion; but of the secondary only a relative notion, which must, because it is only relative, be obscure; they are conceived only as the unknown causes or occasions of certain sensations with which we are well acquainted.

The account I have given of this distinction is founded upon no hypothesis. Whether our notions of primary qualities are direct and distinct, those of the secondary relative and obscure, is a matter of fact, of which every man may have certain knowledge by attentive reflection upon them. To this reflection I appeal as the proper test of what has been advanced, and proceed to make some reflections on this subject.

1. The primary qualities are neither sensations, nor are they resemblances of sensations. This appears to me self-evident. I have a clear and distinct notion of each of the primary qualities. I have a clear and distinct notion of sensation. I can compare the one with the other; and when I do so, I am not able to discern a resembling feature. Sensation is the act, or the feel-

ing (I dispute not which) of a sentient being. Figure, divisibility, solidity, are neither acts nor feelings. Sensation supposes a sentient being as its subject; for a sensation that is not felt by some sentient being, is an absurdity. Figure and divisibility supposes a subject that is figured and divisible, but not a subject that is sentient.

2. We have no reason to think, that the sensations by which we have notice of secondary qualities resemble any quality of body. The absurdity of this notion has been clearly shewn by DES CARTES, LOCKE, and many modern philosophers. It was a tenet of the ancient philosophy, and is still by many imputed to the vulgar, but only as a vulgar error. It is too evident to need proof, that the vibrations of a sounding body do not resemble the sensation of sound, nor the effluvia of an odorous body the sensation of smell.

3. The distinctness of our notions of primary qualities prevents all questions and disputes about their nature. There are no different opinions about the nature of extension, figure, or motion, or the nature of any primary quality. There nature is manifest to our senses, and cannot be unknown to any man, or mistaken by him, though their causes may admit of dispute.

The primary qualities are the object of the mathematical sciences; and the distinctness of our notions of them enables us to reason demonstratively about them to a great extent. Their various modifications are precisely defined in the imagination, and thereby capable of being compared, and their relations determined with precision and certainty.

It is not so with secondary qualities. Their nature not being manifest to the sense, may be a subject of dispute. Our feeling informs us that the fire is hot; but it does not inform us what that heat of the fire is, But does it not appear a contradiction, to say we know that the fire is hot, but we know not what that heat is? I answer, There is the same appearance of contradiction in many things, that must be granted. We know that wine has an inebriating quality; but we know not what that quality is. It is true, indeed, that if we had not some notion of what is meant by the heat of fire, and by an inebriating quality, we could affirm nothing of either with understanding. We have a notion of both; but it is only a relative notion. We know that they are the causes of certain known effects.

4. The nature of secondary qualities is a proper subject of philosophical disquisition; and in this, philosophy has made some progress. It has been discovered, that the sensation of smell is occasioned by the effluvia of bodies; that of sound by their vibration. The disposition of bodies to reflect a particular kind of light occasions the sensation of colour. Very curious discoveries have been made of the nature of heat, and an ample field of discovery in these subjects remains.

5. We may see why the sensations belonging to secondary qualities are an object of our attention, while those which belong to the primary are not.

The first are not only signs of the object perceived, but they bear a capital part in the notion we form of it. We conceive it only as that which occasions such a sensation, and therefore cannot reflect upon it without thinking of the sensation which it occasions; We have no other mark whereby to distinguish it. The thought of a secondary quality, therefore, always carries us back to the sensation which it produces. We give the same name to both, and are apt to confound them together.

But having a clear and distinct conception of primary qualities, we have no need when we think of them to recal their sensations. When a primary quality is perceived, the sensation immediately leads our thought to the quality signified by it, and is itself forgot. We have no occasion afterwards to reflect upon it; and so we come to be as little acquainted with it, as if we had never felt it. This is the case with the sensations of all primary qualities, when they are not so painful or pleasant as to draw our attention.

When a man moves his hand rudely against a pointed hard body, he feels pain, and may easily be persuaded that this pain is a sensation, and that there is nothing resembling it in the hard body; at the same time he perceives the body to be hard and pointed, and he knows that these qualities belong to the body only. In this case, it is easy to distinguish what he feels from what he perceives.

Let him again touch the pointed body gently, so as to give him no pain; and now you can hardly persuade him that he feels any thing but the figure and hardness of the body; so difficult it is to attend to the sensations belonging to primary qualities, when they are neither pleasant nor painful. They carry the thought to the external object, and immediately disappear and are forgot. Nature intended them only as signs; and when they have served that purpose they vanish.

We are now to consider the opinions both of the vulgar, and of philosophers upon this subject. As to the former, it is not to be expected that they should make distinctions which have no connection with the common affairs of life; they do not therefore distinguish the primary from the secondary qualities, but speak of both as being equally qualities of the external object. Of the primary qualities they have a distinct notion, as they are immediately and distinctly perceived by the senses; of the secondary, their notions, as I apprehend, are confused and indistinct, rather than erroneous. A secondary quality is the unknown cause or occasion of a well known effect; and the same name is common to the cause and the effect. Now, to distinguish clearly the different ingredients of a complex notion, and, at the same time, the different meanings of an ambiguous word, is the work of a philosopher; and is not to be expected of the vulgar, when their occasions do not require it.

I grant, therefore, that the notion which the vulgar have of secondary qualities, is indistinct and inaccurate. But there seems to be a contradiction between the vulgar and the philosopher upon this subject, and each charges the other with a gross absurdity. The vulgar say, That fire is hot, and snow cold, and sugar sweet; and that to deny this is a gross absurdity, and contradicts the testimony of our senses. The philosopher says, That heat, and cold, and sweetness, are nothing but sensations in our minds; and it is absurd to conceive, that these sensations are in the fire, or in the snow, or in the sugar.

I believe this contradiction between the vulgar and the philosopher is more apparant than real; and that it is owing to an abuse of language on the part of the philosopher, and to indistinct notions on the part of the vulgar. The philosopher says, There is no heat in the fire, meaning, that the fire has not the sensation of heat. His meaning is just; and the vulgar will agree with him, as soon as they understand his meaning: But his language is improper; for there is really a quality in the fire, of which the proper name is heat; and the name of heat is given to this quality, both by philosophers and by the vulgar, much more frequently than to the sensation of heat. This speech of the philosopher, therefore, is meant by him in one sense; it is taken by the vulgar in another sense. In the sense in which they take it, it is indeed absurd, and so they hold it to be. In the sense in which he means it, it is true; and the vulgar, as soon as they are made to understand that sense, will acknowledge it to be true. They know as well as the philosopher, that the fire does not feel heat; and this is all that he means by saying there is no heat in the fire.

In the opinions of philosophers about primary and secondary qualities, there have been, as was before observed, several revolutions: They were distinguished long before the days of ARISTOTLE, by the sect called Atomists; among whom DEMOCRITUS made a capital figure. In those times, the name of *quality* was applied only to those we call secondary qualities; the primary being considered as essential to matter, were not called qualities. That the atoms, which they held to be the first principles of things, were extended, solid, figured, and moveable, there was no doubt; but the question was, whether they had smell, taste and colour? or, as it was commonly expressed, whether they had qualities? The Atomists maintained, that they had not; that the qualities were not in bodies, but were something resulting from the operation of bodies upon our senses.

It would seem, that when men began to speculate upon this subject, the primary qualities appeared so clear and manifest, that they could entertain no doubt of their existence wherever matter existed; but the secondary so obscure, that they were at a loss where to place them. They used this comparison; as fire, which is neither in the flint nor in the steel, is produced by their collision, so those qualities, though not in bodies, are produced by their impulse upon our senses.

This doctrine was opposed by ARISTOTLE. He believed taste and colour to be substantial forms of bodies, and that their species, as well as those of figure and motion, are received by the senses.

In believing, that what we commonly call *taste* and *colour* is something really inherent in body, and does not depend upon its being tasted and seen, he followed nature. But, in believing that our sensations of taste and colour are the forms or species of those qualities received by the senses, he followed his own theory, which was an absurd fiction. DES CARTES not only shewed the absurdity of sensible species received by the senses, but gave a more just and more intelligible account of secondary qualities than had been given before. Mr LOCKE followed him, and bestowed much pains upon this subject. He was the first, I think, that gave them the name of secondary qualities, which has been very generally adopted. He distinguished the sensation from the quality in the body which is the cause or occasion of that sensation, and shewed that there neither is nor can be any similitude between them.

By this account, the senses are acquitted of putting any fallacy upon us; the sensation is real, and no fallacy; the quality in the body which is the cause, or occasion of this sensation, is likewise real, though the nature of it is not manifest to our senses. If we impose upon ourselves, by confounding the sensation with the quality that occasions it, this is owing to rash judgment, or weak understanding, but not to any false testimony of our senses.

This account of secondary qualities I take to be very just; and, if Mr LOCKE had stopped here, he would have left the matter very clear. But he thought it necessary to introduce the theory of ideas, to explain the distinction between primary and secondary qualities, and by that means, as I think, perplexed and darkened it.

When philosophers speak about ideas, we are often at a loss to know what they mean by them, and may be apt to suspect that they are mere fictions, that have no existence. They have told us, that by the ideas which we have immediately from our senses, they mean our sensations. These, indeed, are real things, and not fictions. We may, by accurate attention to them, know perfectly their nature; and if philosophers would keep by this meaning of the word *idea*, when applied to the objects of sense, they would at least be more intelligible. Let us hear how Mr LOCKE explains the nature of those ideas, when applied to primary and secondary qualities, Book 2. chap. 8. sect. 7. 10th edition. "To discover the nature of our ideas the better, and to discourse of them intelligibly, it will be "convenient to distinguish them, as they are ideas, or "perceptions in our minds, and as they are modifications of matter in the bodies that cause such perceptions in us, that so we may not think (as perhaps "usually is done), that they are exactly the images "and resemblances of something inherit in the subject; most of those of sensation being, in the mind, "no more the likeness of something existing without "us, than the names that stand for them are the likeness of our ideas, which yet, upon hearing, they are "apt to excite in us."

This way of distinguishing a thing, *first*, as what it is; and, *secondly*, as what it is not, is, I apprehend, a very extraordinary way of discovering its nature: And if ideas are ideas or perceptions in our minds, and at the same time the modifications of matter in the bodies that cause such perceptions in us, it will be no easy matter to discourse of them intelligibly.

The discovery of the nature of ideas is carried on in the next section, in a manner no less extraordinary.—“Whatsoever the mind perceives in itself, or is the “immediate object of perception, thought, or under-“standing, that I call *idea;* and the power to produce “any idea in our mind, I call *quality* of the subject “wherein that power is. Thus, a snowball having “the power to produce in us the ideas of white, cold, “and round, the powers to produce those ideas in “us, as they are in the snowball, I call *qualities;* and “as they are sensations, or perceptions in our under-“standings, I call them *ideas;* which ideas, if I speak “of them sometimes as in the things themselves, I “would we understood to mean those qualities in “the objects which produce them in us.”

These are the distinctions which Mr. LOCKE thought convenient, in order to discover the nature of our ideas of the qualities of matter the better, and to discourse of them intelligibly. I believe it will be difficult to find two other paragraphs in the Essay so unintelligible. Whether this is to be imputed to the intractable nature of ideas, or to an oscitancy of the author, with which he is very rarely chargeable, I leave the reader to judge. There are, indeed, several other passages in in the same chapter, in which a like obscurity appears; but I do not choose to dwell upon them. The conclusion drawn by him from the whole, is, that primary and secondary qualities are distinguished by this, that the ideas of the former are resemblances or copies of them; but the ideas of the other are not resemblances of them. Upon this doctrine, I beg leave to make two observations.

First, Taking it for granted, that, by the ideas of primary and secondary qualities, he means the sensations they excite in us; I observe, that it appears strange, that a sensation should be the idea of a quality in body, to which it is acknowledged to bear no resemblance. If the sensation of sound be the idea of that vibration of the sounding body which occasions it, a surfeit may, for the same reason, be the idea of a feast.

A *second* observation is, That when Mr LOCKE affirms, that the ideas of primary qualities, that is, the sensations they raise in us, are resemblances of those qualities, he seems neither to have given due attention to those sensations, nor to the nature of sensation in general.

Let a man press his hand against a hard body, and let him attend to the sensation he feels, excluding from his thought every thing external, even the body that is the cause of his feeling. This abstraction indeed is difficult, and seems to have been little, if at all, practised: But it is not impossible, and it is evidently the only way to understand the nature of the sensation.—A due attention to this sensation will satisfy him, that it is no more like hardness in a body, than the sensations of sound is like vibration in the sounding body.

I know of no ideas but my conceptions; and my idea of hardness in a body, is the conception of such a cohesion of its parts as requires great force to displace them: I have both the conception and belief of this quality in the body, at the same time that I have the sensation of pain, by pressing my hand against it.—The sensation and perception are closely conjoined by my constitution; but I am sure they have no similitude: I know no reason why the one should be called the idea of the other, which does not lead us to call every natural effect the idea of its cause.

Neither did Mr LOCKE give due attention to the nature of sensation in general, when he affirmed, that the ideas of primary qualities, that is, the sensations excited by them, are resemblances of those qualities.

That there can be nothing like sensations in an insentient being, or like thought in an unthinking being, is self-evident, and has been shewn, to the conviction of all men that think, by Bishop BERKELEY; yet this was unknown to Mr LOCKE. It is an humbling consideration, that, in subjects of this kind, self-evident truths may be hid from the eyes of the most ingenious men. But we have, withal, this consolation, that, when once discovered, they shine by their own light; and that light can no more be put out.

Upon the whole, Mr LOCKE, in making secondary qualities to be powers in bodies to excite certain sensations in us, has given a just and distinct analysis of what our senses discover concerning them; but, in applying the theory of ideas to them, and to the primary qualities, he has been led to say things that darken the subject, and that will not bear examination.

Bishop BERKELEY having adopted the sentiments common to philosophers, concerning the ideas we have by our senses, to wit, that they are all sensations, saw more clearly the necessary consequence of this doctrine; which is, that there is no material world; no qualities primary or secondary; and, consequently, no foundation for any distinction between them. He exposed the absurdity of a resemblance between our sensations and any quality, primary, or secondary, of a substance that is supposed to be insentient. Indeed, if it is granted that the senses have no other office but to furnish us with sensations, it will be found impossible to make any distinction between primary and secondary qualities, or even to maintain the existence of a material world.

From the account I have given of the various revolutions in the opinions of philosophers about primary and secondary qualities, I think it appears, that all the darkness and intricacy that thinking men have found in this subject, and the errors they have fallen into, have been owing to the difficulty of distinguishing clearly sensation from perception; what we feel from what we perceive.

The external senses have a double province; to make us feel, and to make us perceive. They furnish us with a variety of sensations, some pleasant, others painful, and others indifferent; at the same time they give us a conception, and an invincible belief of the existence of external objects. This conception of external objects is the work of nature. The belief of their existence, which our senses give, is the work of nature; so likewise is the sensation that accompanies it. This conception and belief which nature produces by means of the senses, we call *perception*. The feeling which goes along with the perception, we call *sensation*. The perception and its corresponding sensation are produced at the same time. In our experience we never find them disjoined. Hence we are led to consider them as one thing, to give them one name, and to confound their different attributes. It becomes very difficult to separate them in thought, to attend to each by itself, and to attribute nothing to it which belongs to the other.

To do this requires a degree of attention to what passes in our own minds, and a talent of distinguishing things that differ, which is not to be expected in the vulgar, and is even rarely found in philosophers; so that the progress made in a just analysis of the operations of our senses has been very slow. The hypothesis of ideas, so generally adopted, hath, as I apprehend, greatly retarded this progress; and we might hope for a quicker advance, if philosophers could so far humble themselves as to believe, that in every branch of the philosophy of nature, the productions of human fancy and conjecture will be found to be dross; and that the only pure metal that will endure the test, is what is discovered by patient observation, and chaste induction.

CHAP. XVIII.

Of other Objects of Perception.

BESIDES primary and secondary qualities of bodies, there are many other immediate objects of perception. Without pretending to a complete enumeration, I think they mostly fall under one or other of the following classes. 1*st*, Certain states or conditions of our own bodies. 2*d*, Mechanical powers or forces. 3*d*, Chemical powers. 4*th*, Medical powers or virtues. 5*th*, Vegetable and animal powers.

That we perceive certain disorders in our own bodies by means of uneasy sensations, which nature hath conjoined with them, will not be disputed. Of this kind are tooth-ach, head-ach, gout, and every distemper and hurt which we feel. The notions which our sense gives of these, have a strong analogy to our notions of secondary qualities. Both are similarly compounded, and may be similarly resolved, and they give light to each other.

In the tooth-ach, for instance, there is, *first*, a painful feeling; and, *secondly*, a conception and belief of some disorder in the tooth, which is believed to be th cause of the uneasy feeling. The first of these is a sensation, the second is perception; for it includes a conception and belief of an external object. But these two things, though of different natures, are so constantly conjoined in our experience, and in our imagination, that we consider them as one. We give the same name to both; for the tooth-ach is the proper name of the pain we feel; and it is the proper name of the disorder in the tooth which causes that pain. If it should be made a question, whether the tooth-ach be in the mind that feels it, or in the tooth that is affected? much might be said on both sides, while it is not observed that the word has two meanings. But a little reflection satisfies us, that the pain is in the mind, and the disorder in the tooth. If some philosopher should pretend to have made a discovery, that the tooth-ach, the gout, the head-ach, are only sensations in the mind, and that it is a vulgar error to conceive that they are distempers of the body, he might defend his system in the same manner as those, who affirm that there is no sound nor colour nor taste in bodies, defend that paradox. But both these systems, like most paradoxes, will be found to be only an abuse of words.

We say that we *feel* the tooth-ach, not that we perceive it. On the other hand, we say that we *perceive* the colour of a body, not that we feel it. Can any reason be given for this difference of phraseology? In answer to this question, I apprehend, that both when we feel the tooth-ach, and when we see a coloured body, there is sensation and perception conjoined. But, in the tooth-ach, the sensation being very painful, engrosses the attention; and therefore we speak of it, as if it were felt only, and not perceived: Whereas, in seeing a coloured body, the sensation is indifferent, and draws no attention. The quality in the body, which we call its colour, is the only object of attention; and therefore we speak of it, as if it were perceived, and not felt. Though all philosophers agree that in seeing colour there is sensation, it is not easy to persuade the vulgar, that, in seeing a coloured body, when the light is not too strong, nor the eye inflamed, they have any sensation or feeling at all.

There are some sensations, which, though they are very often felt, are never attended to, nor relied upon. We have no conception of them; and therefore, in language, there is neither any name for them, nor any form of speech that supposes their existence. Such are the sensations of colour, and of all primary qualities; and therefore those qualities are said to be perceived, but not to be felt. Taste and smell, and heat and cold, have sensations that are often agreeable or disagreeable, in such a degree as to draw our attention; and they are sometimes said to be felt, and sometimes to be perceived. When disorders of the body occasion very acute pain, the uneasy sensation engrosses the attention, and they are said to be felt, not to be perceived.

There is another question relating to phraseology, which this subject suggests. A man says, he feels pain in such a particular part of his body; in his toe, for instance. Now, reason assures us, that pain being a sensation, can only be in the sentient being, as its subject, that is, in the mind. And though philosophers have disputed much about the place of the mind; yet none of them ever placed it in the toe. What shall we say then in this case? do our senses really deceive us, and make us believe a thing which our reason determines to be impossible? I answer, *first*, That when a man says, he has pain in his toe, he is perfectly understood, both by himself, and those who hear im. This is all that he intends. He really feels vhat he and all men call a pain in the toe; and there s no deception in the matter. Whether therefore here be any impropriety in the phrase or not, is of no onsequence in common life. It answers all the ends of peech, both to the speaker and the hearers.

In all languages, there are phrases which have a distinct meaning; while, at the same time, there may be something in the structure of them that disagrees with the analogy of grammar, or with the principles of philosophy. And the reason is, because language is not made either by Grammarians or philosophers. Thus we speak of feeling pain, as if pain was something distinct from the feeling of it. We speak of a pain coming and going, and removing from one place to another. Such phrases are meant by those who use them in a sense that is neither obscure nor false. But the philosopher puts them into his alembic, reduces them to their first principles, draws out of them a sense that was never meant, and so imagines that he has discovered an error of the vulgar.

I observe, *secondly*, That when we consider the sensation of pain by itself, without any respect to its cause, we cannot say with propriety, that the toe is either the place, or the subject of it. But it ought to be remembered, that when we speak of pain in the toe, the sensation is combined in our thought, with the cause of it, which really is in the toe. The cause and the effect are combined in one complex notion, and the same name serves for both. It is the business of the philosopher to analyse this complex notion, and to give different names to its different ingredients. He gives the name of *pain* to the sensation only, and the name of *disorder* to the unknown cause of it. Then it is evident that the disorder only is in the toe, and that it would be an error to think that the pain is in it. But we ought not to ascribe this error to the vulgar, who never made the distinction, and who under the name of pain comprehend both the sensation and its cause.

Cases sometimes happen, which give occasion even to the vulgar to distinguish the painful sensation from the disorder which is the cause of it. A man who has had his leg cut off, many years after, feels pain in a toe of that leg. The toe has now no existence; and he perceives easily, that the toe can neither be the place, nor the subject of the pain which he feels; yet it is the same feeling he used to have from a hurt in the toe; and if he did not know that his leg was cut off, it would give him the same immediate conviction of some hurt or disorder in the toe.

The same phænomenon may lead the philosopher in all cases, to distinguish sensation from perception. We say, that the man had a deceitful feeling, when he felt a pain in his toe after the leg was cut off; and we have a true meaning in saying so. But, if we will speak accurately, our sensations cannot be deceitful; they must be what we feel them to be, and can be nothing else. Where then lies the deceit? I answer, it lies not in the sensasion, which is real, but in the seeming perception he had of a disorder in his toe. This perception, which nature had conjoined with the sensation, was in this instance fallacious.

The same reasoning may be applied to every phænomenon that can, with propriety, be called a deception of sense. As when one, who has the jaundice sees a body yellow, which is really white; or when a man sees an object double, because his eyes are not both directed to it; in these, and other like cases, the sensations we have are real, and the deception is only in the perception which nature has annexed to them.

Nature has connected our perception of external objects with certain sensations. If the sensation is produced, the corresponding perception follows even when there is no object, and in the case is apt to deceive us. In like manner, nature has connected our sensations with certain impressions that are made upon the nerves and brain: And, when the impression is made, from whatever cause, the corresponding sensation and perception immediately follows. Thus, in the man who feels pain in his toe after the leg is cut off, the nerve that went to the toe, part of which was cut off with the leg, had the same impression made upon the remaining part, which, in the natural state of his body, was caused by a hurt in the toe: And immediately this impression is followed by the sensation and perception which nature connected with it.

In like manner, if the same impressions, which are made at present upon my optic nerves by the objects before me, could be made in the dark, I apprehend that I should have the same sensations, and see the same objects which I now see. The impressions and sensations would in such a case be real, and the perception only fallacious.

Let us next consider the notions which our senses give us of those attributes of bodies called *powers.* This is the more necessary, because power seems to imply some activity; yet we consider body as a dead inactive thing, which does not act but may be acted upon.

Of the mechanical powers ascribed to bodies, that which is called their *vis insita*, or *inertia*, may first be considered. By this is meant no more, than that bodies never change their state of themselves, either from rest to motion, or from motion to rest, or from one degree of velocity, or one direction to another. In order to produce any such change, there must be some force impressed upon them; and the change produced is precisely proportioned to the force impressed, and in the direction of that force.

That all bodies have this property, is a matter of fact, which we learn from daily observation, as well as from the most accurate experiments. Now it seems plain, that this does not imply any activity in body, but rather the contrary. A power in body to change its state, would much rather imply activity than its continuing in the same state: So that, although this property of bodies is called their *vis insita*, or *vis inertiæ*, it implies no proper activity.

If we consider, next, the power of gravity, it is a fact, that all the bodies of our planetary system gravitate towards each other. This has been fully proved by the great NEWTON. But this gravitation is not conceived by that philosopher to be a power inherent in bodies, which they exert of themselves, but a force impressed upon them, to which they must necessarily yield. Whether this force be impressed by some subtile æther, or whether it be impressed by the power of the Supreme Being, or of some subordinate spiritual being, we do not know; but all sound natural philosophy, particularly that of NEWTON, supposes it to be an impressed force, and not inherent in bodies.

So that, when bodies gravitate, they do not properly act, but are acted upon: They only yield to an impression that is made upon them. It is common in language to express, by active verbs, many changes in things, wherein they are merely passive: And this way of speaking is used chiefly when the cause of the change is not obvious to sense. Thus we say that a ship sails, when every man of common sense knows that she has no inherent power of motion, and is only driven by wind and tide. In like manner, when we say that the planets gravitate towards the sun, we mean no more, but that, by some unknown power, they are drawn or impelled in that direction.

What has been said of the power of gravitation may be applied to other mechanical powers, such as cohesion, magnetism, electricity; and no less to chemical and medical powers. By all these, certain effects are produced upon the application of one body to another. Our senses discover the effect; but the power is latent. We know there must be a cause of the effect, and we form a relative notion of it from its effect; and very often the same name is used to signify the unknown cause, and the known effect.

We ascribe to vegetables, the powers of drawing nourishment, growing, and multiplying their kind. Here likewise the effect is manifest, but the cause is latent to sense. These powers, therefore, as well as all the other powers we ascribe to bodies, are unknown causes of certain known effects. It is the business of philosophy to investigate the nature of those powers as far as we are able, but our senses leave us in the dark.

We may observe a great similarity in the notions which our senses give us of secondary qualities, of the disorders we feel in our own bodies, and of the various powers of bodies which we have enumerated. They are all obscure and relative notions, being a conception of some unknown cause of a known effect. Their names are, for the most part, common to the effect, and to its cause; and they are a proper subject of philosophical disquisition. They might therefore, I think, not improperly be called *occult* qualities.

This name, indeed, is fallen into disgrace since the time of DES CARTES. It is said to have been used by the Peripatetics to cloke their ignorance, and to stop all inquiry into the nature of those qualities called *occult*. Be it so. Let those answer for this abuse of the word, who were guilty of it. To call a thing occult, if we attend to the meaning of the word, is rather modestly to confess ignorance than to cloke it. It is to point it out as a proper subject for the investigation of philosophers, whose proper business it is to better the condition of humanity, by discovering what was before hid from human knowledge.

Were I therefore to make a division of the qualities of bodies as they appear to our senses, I would divide them first into those that are *manifest*, and those that are *occult*. The manifest qualities are those which Mr LOCKE calls *primary;* such as extension, figure, divisibility, motion, hardness, softness, fluidity. The nature of these is manifest even to sense; and the business of the philosopher with regard to them, is not to find out their nature, which is well known, but to discover the effects produced by their various combinations; and with regard to those of them which are not essential to matter, to discover their causes as far as he is able.

The second class consists of occult qualities, which may be subdivided into various kinds; as *first*, The secondary qualities; *secondly*, The disorders we feel in our own bodies; and, *thirdly*, All the qualities which we call powers of bodies, whether mechanical, chemical, medical, animal, or vegetable; or if there be any other powers not comprehended under these heads. Of all these the existence is manifest to sense, but the nature is occult; and here the philosopher has an ample field.

What is necessary for the conduct of our animal life, the bountiful Author of nature hath made manifest to all men. But there are many other choice secrets of nature, the discovery of which enlarges the power, and exalts the state of man. These are left to be discovered by the proper use of our rational powers. They are hid, not that they may be always concealed from human knowledge, but that we may be excited to search for them. This is the proper business of a philosopher, and it is the glory of a man, and the best reward of his labour, to discover what nature has thus concealed.

CHAP. XIX.

Of Matter and of Space.

THE objects of sense we have hitherto considered are qualities. But qualities must have a subject. We give the names of *matter*, *material substance*, and *body*, to the subject of sensible qualities; and it may be asked, what this *matter* is?

I perceive in a billiard ball, figure, colour, and motion; but the ball is not figure, nor is it colour, nor motion, nor all these taken together; it is something that has figure, and colour, and motion. This is a dictate of nature, and the belief of all mankind.

As to the nature of this something, I am afraid we can give little account of it, but that it has the qualities which our senses discover.

But how do we know that they are qualities, and cannot exist without a subject? I confess I cannot explain how we know that they cannot exist without a subject, any more than I can explain how we know that they exist. We have the information of nature for their existence; and I think we have the information of nature that they are qualities.

The belief that figure, motion, and colour, are qualities, and require a subject, must either be a judgment of nature, or it must be discovered by reason, or it must be a prejudice that has no just foundation. There are philosophers who maintain, that it is a mere prejudice; that a body is nothing but a collection of what we call sensible qualities; and that they neither have nor need any subject. This is the opinion of Bishop BERKELEY and Mr HUME; and they were led to it by finding, that they had not in their minds any idea of substance. It could neither be an idea of sensation nor of reflection.

But to me nothing seems more absurd, than that there should be extension without any thing extended; or motion without any thing moved; yet I cannot give reasons for my opinion, because it seems to me self-evident, and an immediate dictate of my nature.

And that it is the belief of all mankind, appears in the structure of all languages; in which we find adjective nouns used to express sensible qualities. It is well known that every adjective in language must belong to some substantive expressed or understood; that is, every quality must belong to some subject.

Sensible qualities make so great a part of the furniture of our minds, their kinds are so many, and their number so great, that if prejudice, and not nature, teach us to ascribe them all to a subject, it must have a great work to perform, which cannot be accomplished in a short time, nor carried on to the same pitch in every individual. We should find not individuals only, but nations and ages, differing from each other in the progress which this prejudice had made in their sentiments; but we find no such difference among men. What one man accounts a quality, all men do, and ever did.

It seems therefore to be a judgment of nature, that the things immediately perceived are qualities, which must belong to a subject; and all the information that our senses give us about this subject, is, that it is that to which such qualities belong. From this it is evident, that our notion of body or matter, as distinguished from its qualities, is a relative notion; and I am afraid it must always be obscure until men have other faculties.

The philosopher in this seems to have no advantage above the vulgar; for as they perceive colour, and figure, and motion by their senses as well as he does, and both are equally certain that there is a subject of those qualities, so the notions which both have of this subject are equally obscure. When the philosopher calls it a *substratum*, and a subject of inhesion, those learned words convey no meaning but what every man understands and expresses, by saying in common language, that it is a thing extended, and solid, and moveable.

The relation which sensible qualities bear to their subject, that is, to body, is not, however, so dark, but that it is easily distinguished from all other relations. Every man can distinguish it from the relation of an effect to its cause; of a mean to its end; or of a sign to the thing signified by it.

I think it requires some ripeness of understanding to distinguish the qualities of a body from the body. Perhaps this distinction is not made by brutes, nor by infants; and if any one thinks that this distinction is not made by our senses, but by some other power of the mind, I will not dispute this point, provided it be granted, that men, when their faculties are ripe, have a natural conviction, that sensible qualities cannot exist by themselves without some subject to which they belong.

I think, indeed, that some of the determinations we form concerning matter cannot be deduced solely from the testimony of sense, but must be referred to some other source.

There seems to be nothing more evident, than that all bodies must consist of parts; and that every part of a body is a body, and a distinct being which may exist without the other parts; and yet I apprehend this conclusion is not deduced solely from the testimony of sense: For, besides that it is a necessary truth, and therefore no object of sense, there is a limit beyond which we cannot perceive any division of a body. The parts become too small to be perceived by our senses; but we cannot believe that it becomes then incapable of being further divided, or that such division would make it not to be a body.

We carry on the division and subdivision in our thought far beyond the reach of our senses, and we can find no end to it: Nay, I think we plainly discern, that there can be no limit beyond which the division cannot be carried.

For if there be any limit to this division, one of two things must necessarily happen. Either we have come by division to a body which is extended, but has no parts, and is absolutely indivisible; or this body is divisible, but as soon as it is divided, it becomes no body. Both these positions seem to me absurd, and one or the other is the necessary consequence of supposing a limit to the divisibility of matter.

On the other hand, if it is admitted that the divisibility of matter has no limit, it will follow, that no body can be called one individual substance. You may as well call it two, or twenty, or two hundred. For when it is divided into parts, every part is a being or substance distinct from all the other parts, and was so even before the division: Any one part may continue to exist, though all the other parts were annihilated.

There is, indeed, a principle long received, as an axiom in metaphysics, which I cannot reconcile to the divisibility of matter. It is, That every being is one, *omne ens est unum*. By which, I suppose, is meant, that every thing that exists must either be one indivisible being, or composed of a determinate number of indivisible beings. Thus an army may be divided into regiments, a regiment into companies, and a company into men. But here the division has its limit; for you cannot divide a man without destroying him, because he is an individual; and every thing, according to this axiom, must be an individual, or made up of individuals.

That this axiom will hold with regard to an army, and with regard to many other things, must be granted: But I require the evidence of its being applicable to all beings whatsoever.

LEIBNITZ, conceiving that all beings must have this metaphysical unity, was by this led to maintain, that matter, and indeed the whole universe, is made up of monades, that is, simple and indivisible substances.

Perhaps the same apprehension might lead BOSCOVICH into his hypothesis, which seems much more ingenious; to wit, that matter is composed of a definite number of mathematical points, endowed with certain powers of attraction and repulsion.

The divisibility of matter without any limit, seems to me more tenable than either of these hypothesis; nor do I lay much stress upon the metaphysical axiom, considering its origin. Metaphysicians thought proper to make the attributes common to all beings the subject of a science. It must be a matter of some difficulty to find out such attributes: And, after racking their invention, they have specified three, to wit, unity, verity, and goodness; and these, I suppose have been invented to a make a number, rather than from any clear evidence of their being universal.

There are other determinations concerning matter, which, I think, are not solely founded upon the testimony of sense: Such as, that it is impossible that two bodies should occupy the same place at the same time; or that the same body should be in different places at the same time; or that a body can be moved from one place to another, without passing through the intermediate places, either in a straight course, or by some circuit. These appear to be necessary truths, and therefore cannot be conclusions of our senses; for our senses testify only what is, and not what must necessarily be.

We are next to consider our notion of space. It may be observed, that although space be not perceived by any of our senses when all matter is removed; yet, when we perceive any of the primary qualities, space presents itself as a necessary concomitant: For there can neither be extension, nor motion, nor figure, nor division, nor cohesion of parts without space.

There are only two of our senses by which the notion of space enters into the mind; to wit, touch and sight. If we suppose a man to have neither of these senses, I do not see how he could ever have any conception of space. Supposing him to have both, until he sees or feels other objects, he can have no notion of space: It has neither colour nor figure to make it an object of sight: It has no tangible quality to make it an object of touch. But other objects of sight and touch carry the notion of space along with them; and not the notion only, but the belief of it: For a body could not exist if there was no space to contain it: It could not move if there was no space: Its situation, its distance, and every relation it has to other bodies, suppose space.

But though the notion of space seems not to enter at first into the mind, until it is introduced by the proper objects of sense; yet, being once introduced, it remains in our conception and belief, though the objects which introduced it be removed. We see no absurdity in supposing a body to be annihilated; but the space that contained it remains; and to suppose that annihilated, seems to be absurd. It is so much allied to nothing or emptiness, that it seems incapable of annihilation or of creation.

Space not only retains a firm hold of our belief, even when we suppose all the objects that introduced it to be annihilated, but it swells to immensity. We can set no limits to it, either of extent or of duration.—Hence we call it immense, eternal, immoveable, and indestructible. But it is only an immense, eternal, immoveable, and indestructible void or emptiness.—Perhaps we may apply to it what the Peripatetics said of their first matter, that whatever it is, it is potentially only, not actually.

When we consider parts of space that have measure and figure, there is nothing we understand better, nothing about which we can reason so clearly, and to so great extent. Extension and figure are circumscribed parts of space, and are the object of geometry, a science in which human reason has the most ample field, and can go deeper, and with more certainty than in any other. But when we attempt to comprehend the whole of space, and to trace it to its origin, we lose ourselves in the search. The profound speculations of ingenious men upon this subject differ so widely, as may lead us to suspect, that the line of human understanding is too short to reach the bottom of it.

Bishop BERKELEY, I think, was the first who observed, that the extension, figure, and space, of which we speak in common language, and of which geometry treats, are originally perceived by the sense of touch only; but that there is a notion of extension, figure, and space, which may be got by sight, without any aid from touch. To distinguish these, he calls the first tangible extension, tangible figure, and tangible space; the last he calls visible.

As I think this distinction very important in the philosophy of our senses, I shall adopt the names used by the inventor to express it; remembering what has been already observed, that space, whether tangible or visible, is not so properly an object of sense, as a necessary concomitant of the objects both of sight and touch.

The reader may likewise be pleased to attend to this, that when I use the names of tangible and visible space, I do not mean to adopt Bishop BERKELEY's opinion, so far as to think that they are really different things, and altogether unlike. I take them to be different conceptions of the same thing; the one very partial, and the other more complete; but both distinct and just, as far as they reach.

Thus when I see a spire at a very great distance, it seems like the point of a bodkin; there appears no vane at the top, no angles. But when I view the same object at a small distance, I see a huge pyramid of several angles with a vane on the top. Neither of these appearances is fallacious. Each of them is what it ought to be, and what it must be, from such an object seen at such different distances. These different appearances of the same object may serve to illustrate the different conceptions of space, according as they are drawn from the information of sight alone, or as they are drawn from the additional information of touch.

Our sight alone, unaided by touch, gives a very partial notion of space, but yet a distinct one. When it is considered, according to this partial notion, I call it visible space. The sense of touch gives a much more complete notion of space; and when it is considered according to this notion, I call it tangible space. Perhaps there may be intelligent beings of a higher order, whose conceptions of space are much more complete than those we have from both senses. Another sense added to those of sight and touch, might, for what I know, give us conceptions of space, as different from those we can now attain, as tangible space is from visible; and might resolve many knotty points concerning it, which, from the imperfection of our faculties we cannot by any labour untie.

Berkeley acknowledges that there is an exact correspondence between the visible figure and magnitude of objects, and the tangible; and that every modification of the one has a modification of the other corresponding. He acknowledges likewise, that nature has established such a connection between the visible figure and magnitude of an object, and the tangible, that we learn by experience to know the tangible figure and magnitude from the visible. And having been accustomed to do so from infancy, we get the habit of doing it with such facility and quickness, that we think we see tangible figure, magnitude, and distance of bodies, when, in reality, we only collect those tangible qualities, from the corresponding visible qualities, which are natural signs of them.

The correspondence and connection which Berke-

LEY shews to be between the visible figure and magnitude of objects, and their tangible figure and magnitude, is in some respects very similar to that which we have observed between our sensations, and the primary qualities with which they are connected. No sooner is the sensation felt, than immediately we have the conception and belief of the corresponding quality.—We give no attention to the sensation; it has not a name; and it is difficult to persuade us that there was any such thing.

In like manner, no sooner is the visible figure and magnitude of an object seen, than immediately we have the conception and belief of the corresponding tangible figure and magnitude. We give no attention to the visible figure and magnitude. It is immediately forgot, as if it had never been perceived; and it has no name in common language; and indeed, until BERKELEY pointed it out as a subject of speculation, and gave it a name, it had none among philosophers, excepting in one instance, relating to the heavenly bodies, which are beyond the reach of touch. With regard to them, what BERKELEY calls visible magnitude, was, by Astronomers, called apparent magnitude.

There is surely an apparent magnitude, and an apparent figure of terrestrial objects, as well as of celestial; and this is what BERKELEY calls their visible figure and magnitude. But this was never made an object of thought among philosophers, until that author gave it a name, and observed the correspondence and connection between it and tangible magnitude and figure, and how the mind gets the habit of passing so instantaneously from the visible figure, as a sign to the tangible figure, as the thing signified by it, that the first is perfectly forgot, as if it had never been perceived.

Visible figure, extension, and space, may be made a subject of mathematical speculation, as well as the tangible. In the visible, we find two dimensions only; in the tangible three. In the one, magnitude is measured by angles; in the other by lines. Every part of visible space bears some proportion to the whole; but tangible space being immense, any part of it bears no proportion to the whole.

Such differences in their properties led Bishop BERKELEY to think, that visible and tangible magnitude and figure, are things totally different and dissimilar, and cannot both belong to the same object.

And upon this dissimilitude is grounded one of the strongest arguments by which his system is supported. For it may be said, if there be external objects which have a real extension and figure, it must be either tangible extension and figure, or visible, or both. The last appears absurd; nor was it ever maintained by any man, that the same object has two kinds of extension and figure, totally dissimilar. There is then only one of the two really in the object; and the other must be ideal. But no reason can be assigned why the perceptions of one sense should be real, whilst those of another are only ideal: and he who is persuaded that the objects of sight are ideas only, has equal reason to believe so of the objects of touch.

This argument, however, loses all its force, if it be true, as was formerly hinted, that visible figure and extension are only a partial conception, and the tangible figure and extension a more complete conception of that figure and extension which is really in the object.

It has been proved very fully by Bishop BERKELEY, that sight alone, without any aid from the informations of touch, gives us no perception, nor even conception, of the distance of any object from the eye. But he was not aware that this very principle overturns the argument for his system, taken from the difference between visible and tangible extension and figure: For, supposing external objects to exist, and to have that tangible extension and figure which we perceive, it follows demonstrably, from the principle now mentioned, that their visible extension and figure must be just what we see it to be.

The rules of perspective, and of the projection of the sphere, which is a branch of perspective, are demonstrable. They suppose the existence of external objects, which have a tangible extension and figure; and, upon that supposition, they demonstrate what must be the visible extension and figure of such objects, when placed in such a position, and at such a distance.

Hence it is evident, that the visible figure and extension of objects is so far from being incompatible with the tangible, that the first is a necessary consequence from the last, in beings that see as we do. The correspondence between them is not arbitrary, like that between words and the thing they signify, as BERKELEY thought; but it results necessarily from the nature of the two senses; and this correspondence being always found in experience to be exactly what the rules of perspective shew that it ought to be, if the senses give true information, is an argument of the truth of both.

CHAP. XX.

Of the Evidence of Sense, and of Belief in General.

THE intention of nature in the powers which we call the external senses, is evident. They are intended to give us that information of external objects which the Supreme Being saw to be proper for us in our present state; and they give to all mankind the information necessary for life, without reasoning, without any art or investigation on our part.

The most uninstructed peasant has as distinct a conception, and as firm a belief of the immediate objects of his senses, as the greatest philosopher; and with this he rests satisfied, giving himself no concern how he came by this conception and belief. But the philosopher is impatient to know how his conception of external objects, and his belief of their existence, is produced. This, I am afraid, is hid in impenetrable darkness. But where there is no knowledge, there is the more room for conjecture; and of this philosophers have always been very liberal.

The dark cave and shadows of PLATO, the species of ARISTOTLE, the films of EPICURUS, and the ideas and impressions of modern philosophers, are the productions of human fancy, successively invented to satisfy the eager desire of knowing how we perceive external objects; but they are all deficient in the two essential characters of a true and philosophical account of the phænomenon: For we neither have any evidence of their existence; nor, if they did exist, can it be shewn how they would produce perception.

It was before observed, that there are two ingredients in this operation of perception: *First*, The conception or notion of the object; and, *secondly*, The belief of its present existence; both are unaccountable.

That we can assign no adequate cause of our first conceptions of things, I think, is now acknowledged by the most enlightened philosophers. We know that such is our constitution, that in certain circumstances we have certain conceptions; but how they are produced, we know no more than how we ourselves were produced.

When we have got the conception of external objects by our senses, we can analyse them in our thought into their simple ingredients; and we can compound those ingredients into various new forms, which the senses never presented. But it is beyond the power of human imagination to form any conception, whose simple ingredients have not been furnished by Nature in a manner unaccountable to our understanding.

We have an immediate conception of the operations of our own minds, joined with a belief of their existence; and this we call consciousness. But this is only giving a name to this source of our knowledge. It is not a discovery of its cause. In like manner, we have, by our external senses, a conception of external objects, joined with a belief of their existence; and this we call perception. But this is only giving a name to another source of our knowledge, without discovering its cause.

We know, that when certain impressions are made upon our organs, nerves, and brain, certain corresponding sensations are felt, and certain objects are both conceived and believed to exist. But in this train of operations Nature works in the dark. We can neither discover the cause of any one of them, nor any necessary connection of one with another: And whether they are connected by any necessary tie, or only conjoined in our constitution by the will of Heaven, we know not.

That any kind of impression upon a body should be the efficient cause of sensation, appears very absurd. Nor can we perceive any necessary connection between sensation and the conception and belief of an external object. For any thing we can discover, we might have been so framed as to have all the sensations we now have by our senses, without any impressions upon our organs, and without any conception of any external object. For any thing we know, we might have been so made as to perceive external objects, without any impressions on bodily organs, and without any of those sensations which invariably accompany perception in our present frame.

If our conception of external objects be unaccountable, the conviction and belief of their existence, which we get by our senses, is no less so.

Belief, assent, conviction, are words which I think do not admit of logical definition, because the operation of mind signified by them is perfectly simple, and of its own kind. Nor do they need to be defined, because they are common words, and well understood.

Belief must have an object. For he that believes, must believe something; and that which he believes is called the object of his belief. Of this object of his belief, he must have some conception, clear or obscure; for although there may be the most clear and distinct conception of an object, without any belief of its existence, there can be no belief without conception.

Belief is always expressed in language by a proposition, wherein something is affirmed or denied. This is the form of speech which in all languages is appropriated to that purpose, and without belief there could be neither affirmation nor denial, nor should we have any form of words to express either. Belief admits of all degrees from the slightest suspicion to the fullest assurance. These things are so evident to every man that reflects, that it would be abusing the reader's patience to dwell upon them.

I proceed to observe, that there are many operations of mind in which, when we analyse them as far as we are able, we find belief to be an essential ingredient. A man cannot be conscious of his own thoughts, without believing that he thinks. He cannot perceive an object of sense, without believing that it exists. He cannot distinctly remember a past event without believing that it did exist. Belief therefore is an ingredient in consciousness, in perception, and in remembrance.

Not only in most of our intellectual operations, but in many of the active principles of the human mind, belief enters as an ingredient. Joy and sorrow, hope and fear, imply a belief of good or ill, either present or in expectation. Esteem, gratitude, pity, and resentment, imply a belief of certain qualities in their objects. In every action that is done for an end, there must be a belief of its tendency to that end. So large a share has belief in our intellectual operations, in our active principles, and in our actions themselves, that as faith in things divine is represented as the main spring in the life of a Christian, so belief in general is the main spring in the life of a man.

That men often believe what there is no just ground to believe, and thereby are led into hurtful errors, is too evident to be denied: And, on the other hand, that there are just grounds of belief, can as little be doubted by any man who is not a perfect sceptic.

We give the name of evidence to whatever is a ground of belief. To believe without evidence is a weakness which every man is concerned to avoid, and which every man wishes to avoid. Nor is it in a man's power to believe any thing longer than he thinks he has evidence.

What this evidence is, is more easily felt than described. Those who never reflected upon its nature, feel its influence in governing their belief. It is the business of the Logician to explain its nature, and to distinguish its various kinds and degrees; but every man of understanding can judge of it, and commonly judges right, when the evidence is fairly laid before him, and his mind is free from prejudice. A man who knows nothing of the theory of vision, may have a good eye; and a man who never speculated about evidence in the abstract, may have a good judgment.

The common occasions of life lead us to distinguish evidence into different kinds, to which we give names that are well understood; such as the evidence of sense, the evidence of memory, the evidence of consciousness, the evidence of testimony, the evidence of axioms, the evidence of reasoning: All men of common understanding agree, that each of these kinds of evidence may afford just ground of belief, and they agree very generally in the circumstances that strengthen or weaken them.

Philosophers have endeavoured by analysing the different sorts of evidence, to find out some common nature wherein they all agree, and thereby to reduce them all to one. This was the aim of the schoolmen in their intricate disputes about the criterion of truth. DES CARTES placed this criterion of truth in clear and distinct perception; and laid it down as a maxim, that whatever we clearly and distinctly perceive to be true, is true; but it is difficult to know what he understands by clear and distinct perception in this maxim. Mr Locke placed it in a perception of the agreement or disagreement of our ideas, which perception is immediate in intuitive knowledge, and by the intervention of other ideas in reasoning.

I confess that, although I have, as I think, a distinct notion of the different kinds of evidence above-mentioned, and perhaps of some others, which it is unnecessary here to enumerate, yet I am not able to find any common nature to which they may all be reduced. They seem to me to agree only in this, that they are all fitted by Nature to produce belief in the human mind; some of them in the highest degree, which we call certainty, others in various degrees according to circumstances.

I shall take it for granted, that the evidence of sense, when the proper circumstances concur, is good evidence, and a just ground of belief. My intention in this place is only to compare it with the other kinds that have been mentioned, that we may judge whether it be reducible to any of them, or of a nature peculiar to itself.

First, It seems to be quite different from the evidence of reasoning. All good evidence is commonly called reasonable evidence, and very justly, because it ought to govern our belief as reasonable creatures. And, according to this meaning, I think the evidence of sense no less reasonable than that of demonstration. If Nature give us information of things that concern us, by other means than by reasoning, reason itself will direct us to receive that information with thankfulness, and to make the best use of it.

But when we speak of the evidence of reasoning as a particular kind of evidence, it means the evidence of propositions that are inferred by reasoning, from propositions already known and believed. Thus the evidence of the fifth proposition of the first book of EUCLID's Elements consists in this, That it is shewn to be the necessary consequence of the axioms, and of the preceding propositions. In all reasoning, there must be one or more premises, and a conclusion drawn from them. And the premises are called the reason why we must believe the conclusion which we see to follow from them.

That the evidence of sense is of a different kind, needs little proof. No man seeks a reason for believing what he sees or feels; and if he did, it would be difficult to find one. But though he can give no reason for believing his senses, his belief remains as firm as if it were grounded on demonstration.

Many eminent philosophers thinking it unreasonable to believe, when they could not shew a reason, have laboured to furnish us with reasons for believing our senses; but their reasons are very insufficient, and will not bear examination. Other philosophers have shewn very clearly the fallacy of these reasons, and have, as they imagine, discovered invincible reasons against this belief; but they have never been able either to shake it in themselves, or to convince others. The statesman continues to plod, the soldier to fight, and the merchant to export and import, without being in the least moved by the demonstrations that have been offered of the non-existence of those things about which they are so seriously employed. And a man may as soon, by reasoning, pull the moon out of her orbit, as destroy the belief of the objects of sense.

Shall we say then that the evidence of sense is the same with that of axioms, or self-evident truths? I answer, *first*, That all modern philosophers seem to agree, that the existence of the objects of sense is not self-evident, because some of them have endeavoured to prove it by subtile reasoning, others to refute it. Neither of these can consider it as self-evident.

Secondly, I would observe, that the word *axiom* is taken by philosophers in such a sense, as that the existence of the objects of sense cannot, with propriety, be called an axiom. They give the name of axiom only to self-evident truths that are necessary, and are not limited to time and place, but must be true at all times, and in all places. The truths attested by our senses are not of this kind; they are contingent, and limited to time and place.

Thus, that one is the half of two, is an axiom. It is equally true at all times, and in all places. We perceive, by attending to the proposition itself, that it cannot but be true; and therefore it is called an eternal, necessary and immutable truth. That there is at present a chair on my right hand, and another on my left, is a truth attested by my senses; but it is not necessary, nor eternal, nor immutable. It may not be true next minute; and therefore, to call it an axiom, would, I apprehend, be to deviate from the common use of the word.

Thirdly, If the word *axiom* be put to signify every truth which is known immediately, without being deduced from any antecedent truth, then the existence of the objects of sense may be called an axiom. For my senses give me as immediate conviction of what they testify, as my understanding gives me of what is commonly called an axiom.

There is no doubt an analogy between the evidence of sense and the evidence of testimony. Hence we find in all languages the analogical expressions of the *testimony of sense*, of giving *credit* to our senses, and the like. But there is a real difference between the two, as well as a similitude. In believing upon testimony, we rely upon the authority of a person who testifies; but we have no such authority for believing our senses.

Shall we say then that this belief is the inspiration of the Almighty? I think this may be said in a good sense; for I take it to be the immediate effect of our constitution, which is the work of the Almighty. But if inspiration be understood to imply a persuasion of its coming from God, our belief of the objects of sense is not inspiration; for a man would believe his senses though he had no notion of a Deity. He who is persuaded that he is the workmanship of God, and that it is a part of his constitution to believe his senses, may think that a good reason to confirm his belief: But he had the belief before he could give this or any other reason for it.

If we compare the evidence of sense with that of memory, we find a great resemblance, but still some difference. I remember distinctly to have dined yesterday with such a company. What is the meaning of this? It is, that I have a distinct conception and firm belief of this past event; not by reasoning, not by testimony, but immediately from my constitution: And I give the name of memory to that part of my constitution, by which I have this kind of conviction of past events.

I see a chair on my right hand. What is the meaning of this? It is, that I have, by my constitution, a distinct conception and firm belief of the present existence of the chair in such a place, and in such a position; and I give the name of seeing to that part of my constitution, by which I have this immediate conviction. The two operations agree in the immediate conviction which they give. They agree in this also, that the things believed are not necessary, but contingent, and limited to time and place. But they differ in two respects; *first*, That memory has something for its object that did exist in time past; but the object of sight, and of all the senses, must be something which exists at present. And, *secondly*, That I see by my eyes, and only when they are directed to the object, and when it is illuminated. But my memory is not limited by any bodily organ that I know, nor by light and darkness, though it has its limitations of another kind.

These differences are obvious to all men, and very reasonably lead them to consider seeing and remembering as operations specifically different. But the nature of the evidence they give has a great resemblance. A like difference and a like resemblance there is between the evidence of sense and that of consciousness, which I leave the reader to trace.

As to the opinion, that evidence consists in a perception of the agreement of ideas, we may have occasion to consider it more particularly in another place. Here I only observe, that, when taken in the most favourable sense, it may be applied with propriety to the evidence of reasoning, and to the evidence of some axioms. But I cannot see how, in any sense, it can be applied to the evidence of consciousness, to the evidence of memory, or to that of the senses.

When I compare the different kinds of evidence above mentioned, I confess after all, that the evidence of reasoning, and that of some necessary and self-evident truths, seems to be the least mysterious, and the most perfectly comprehended; and therefore I do not think it strange that philosophers should have endeavoured to reduce all kinds of evidence to these.

When I see a proposition to be self-evident and necessary, and that the subject is plainly included in the predicate, there seems to be nothing more that I can desire, in order to understand why I believe it. And when I see a consequence that necessarily follows from one or more self-evident propositions, I want nothing more with regard to my belief of that consequence. The light of truth so fills my mind in these cases, that I can neither conceive, nor desire any thing more satisfying.

On the other hand, when I remember distinctly a past event, or see an object before my eyes, this commands my belief no less than an axiom. But when, as a philosopher, I reflect upon this belief, and want to trace it to its origin, I am not able to resolve it into necessary and self-evident axioms, or conclusions that are necessarily consequent upon them. I seem to want that evidence which I can best comprehend, and which gives perfect satisfaction to an inquisitive mind; yet it is ridiculous to doubt, and I find it is not in my power. An attempt to throw off this belief, is like an attempt to fly, equally ridiculous and impracticable.

To a philosopher, who has been accustomed to think that the treasure of his knowledge is the acquisition of that reasoning power of which he boasts, it is no doubt humiliating to find, that his reason can lay no claim to the greater part of it.

By his reason, he can discover certain abstract and necessary relations of things: But his knowledge of what really exists, or did exist, comes by another channel, which is open to those who cannot reason. He is led to it in the dark, and knows not how he came by it.

It is no wonder that the pride of philosophy should lead some to invent vain theories, in order to account for this knowledge; and others, who see this to be impracticable, to spurn at a knowledge they cannot account for, and vainly attempt to throw it off, as a reproach to their understanding. But the wise and the humble will receive it as the gift of Heaven, and endeavour to make the best use of it.

CHAP. XXI.

Of the Improvement of the Senses.

OUR senses may be considered in two views; *first*, As they afford us agreeable sensations, or subject us to such as are disagreeable; and, *secondly*, As they give us information of things that concern us.

In the *first* view, they neither require nor admit of improvement. Both the painful and the agreeable sensations of our external senses are given by nature for certain ends; and they are given in that degree which is the most proper for their end. By diminishing or increasing them, we should not mend, but mar the work of nature.

Bodily pains are indications of some disorder or hurt of the body, and admonitions to use the best means in our power to prevent or remove their causes. As far as this can be done by temperance, exercise, regimen, or the skill of the physician, every man hath sufficient inducement to do it.

When pain cannot be prevented or removed, it is greatly alleviated by patience and fortitude of mind. While the mind is superior to pain, the man is not unhappy, though he may be exercised. It leaves no sting behind it, but rather matter of triumph and agreeable reflection, when borne properly, and in a good cause. The Canadians have taught us, that even savages may acquire a superiority to the most excruciating pains; and, in every region of the earth, instances will be found, where a sense of duty, of honour, or even of worldly interest, have triumphed over it.

It is evident, that nature intended for man in his present state, a life of labour and toil, wherein he may be occasionally exposed to pain and danger: And the happiest man is not he who has felt least of those evils, but he whose mind is fitted to bear them by real magnanimity.

Our active and perceptive powers are improved and perfected by use and exercise. This is the constitution of nature. But, with regard to the agreeable and disagreeable sensations we have by our senses, the very contrary is an established constitution of nature: The frequent repetition of them weakens their force. Sensations at first very disagreeable, by use become tolerable, and at last perfectly indifferent. And those that are at first very agreeable, by frequent repetition become insipid, and at last perhaps give disgust. Nature has set limits to the pleasures of sense, which we cannot pass; and all studied gratification of them, as it is mean and unworthy of a man, so it is foolish and fruitless.

The man who, in eating and drinking, and in other gratifications of sense, obeys the calls of nature, without affecting delicacies and refinements, has all the enjoyment that the senses can afford. If one could, by a soft and luxurious life, acquire a more delicate sensibility to pleasure, it must be at the expence of a like sensibility to pain, from which he can never promise exemption; and at the expence of cherishing many diseases which produce pain.

The improvement of our external senses, as they are the means of giving us information, is a subject more worthy of our attention: For although they are not the noblest and most exalted powers of our nature, yet they are not the least useful. All that we know or can know of the material world, must be grounded upon their information; and the philosopher, as well as the day-labourer, must be indebted to them for the largest part of his knowledge.

Some of our perceptions by the senses may be called original, because they require no previous experience or learning; but the far greatest part is acquired, and the fruit of experience.

Three of our senses, to wit, smell, taste, and hearing, originally give us only certain sensations, and a conviction that these sensations are occasioned by some external object. We give a name to that quality of the object by which it is fitted to produce such a sensation, and connect that quality with the object, and with its other qualities.

Thus we learn, that a certain sensation of smell is produced by a rose; and that quality in the rose, by which it is fitted to produce this sensation, we call the smell of the rose. Here it is evident that the sensation is original. The perception, that the rose has that quality, which we call its smell, is acquired. In like manner, we learn all those qualities in bodies, which we call their smell, their taste, their sound. These are all secondary qualities, and we give the same name to them which we give to the sensations they produce; not from any similitude between the sensation and the quality of the same name, but because the quality is signified to us by the sensation as its sign, and because our senses give us no other knowledge of the quality, but that it is fit to produce such a sensation.

By the other two senses, we have much more ample information. By sight, we learn to distinguish objects by their colour, in the same manner as by their sound, taste, and smell. By this sense, we perceive visible objects to have extension in two dimensions, to mediately followed by the conception and belief, that there is in my hand a hard smooth body of a spherical figure, and about an inch and a half in diameter. This belief is grounded neither upon reasoning, nor upon experience; it is the immediate effect of my constitution, and this I call original perception.

In acquired perception, the sign may be either a sensation, or something originally perceived. The thing signified is something, which, by experience, has been found connected with that sign.

Thus, when the ivory ball is placed before my eye, I perceive by sight what I before perceived by touch, that the ball is smooth, spherical, of such a diameter, and at such a distance from the eye; and to this is added the perception of its colour. All these things I perceive by sight distinctly, and with certainty: Yet it is certain from principles of philosophy, that if I had not been accustomed to compare the informations of sight with those of touch, I should not have perceived these things by sight. I should have perceived a circular object, having its colour gradually more faint towards the shaded side. But I should not have perceived it to have three dimensions, to be spherical, to be of such a linear magnitude, and at such a distance from the eye. That these last mentioned are not original perceptions of sight, but acquired by experience, is sufficiently evident from the principles of optics, and from the art of painters, in painting objects of three dimensions, upon a plane which has only two. And it has been put beyond all doubt, by observations recorded of several persons, who having, by cataracts in their eyes, been deprived of sight from their infancy, have been couched and made to see, after they came to years of understanding.

Those who have had their eye-sight from infancy, acquire such perceptions so early, that they cannot recollect the time when they had them not, and therefore make no distinction between them and their original perceptions; nor can they be easily persuaded, that there is any just foundation for such a distinction. In all languages men speak with equal assurance of their seeing objects to be spherical or cubical, as of their feeling them to be so; nor do they ever dream, that these perceptions of sight were not as early and original as the perceptions they have of the same objects by touch.

This power which we acquire of perceiving things by our senses, which originally we should not have perceived, is not the effect of any reasoning on our part: It is the result of our constitution, and of the situations in which we happen to be placed.

We are so made, that when two things are found to be conjoined in certain circumstances, we are prone to believe that they are connected by nature, and will always be found together in like circumstances. The belief which we are led into in such cases is not the effect of reasoning, nor does it arise from intuitive evidence in the thing believed; it is, as I apprehend, the immediate effect of our constitution: Accordingly it is strongest in infancy, before our reasoning power appears, before we are capable of drawing a conclusion from premises. A child who has once burnt his finger in a candle, from that single instance connects the pain of burning with putting his finger in the candle, and believes that these two things must go together. It is obvious, that this part of our constitution is of very great use before we come to the use of reason, and guards us from a thousand mischiefs, which, without it, we would rush into; it may sometimes lead us into error, but the good effects of it far overbalance the ill.

It is no doubt, the perfection of a rational being to have no belief but what is grounded on intuitive evidence, or on just reasoning: But man, I apprehend, is not such a being; nor is it the intention of nature that he should be such a being, in every period of his existence. We come into the world without the exercise of reason; we are merely animal before we are rational creatures; and it is necessary for our preservation, that we should believe many things before we can reason. How then is our belief to be regulated before we have reason to regulate it? has nature left it to be regulated by chance? By no means. It is regulated by certain principles, which are parts of our constitution; whether they ought to be called animal principles, or instinctive principles, or what name we give to them, is of small moment; but they are certainly different from the faculty of reason: They do the office of reason while it is in its infancy, and must, as it were, be carried in a nurse's arms, and they are leading strings to it in its gradual progress.

From what has been said, I think it appears, that our original powers of perceiving objects by our senses receive great improvement by use and habit; and without this improvement, would be altogether insufficient for the purposes of life. The daily occurrences of life not only add to our stock of knowledge, but give additional perceptive powers to our senses; and time gives us the use of our eyes and ears, as well as of our hands and legs.

This is the greatest and moſt important improvement of our external senses. It is to be found in all men come to years of understanding, but is various in different persons according to their different occupations, and the different circumstances in which they are placed. Every artist acquires an eye as well as a hand in his own profession: His eye becomes skilled in perceiving, no less than his hand in executing what belongs to his employment.

Besides this improvement of our senses, which nature produces without our intention, there are various ways in which they may be improved, or their defects remedied by art. As, *first*, by a due care of the organs of sense, that they be in a sound and natural state. This belongs to the department of the Medical Faculty.

Secondly, By accurate attention to the objects of sense. The effects of such attention in improving our senses appear in every art. The artist, by giving more attention to certain objects than others do, by that means perceives many things in those objects which others do not. Those who happen to be deprived of one sense, frequently supply that defect in a great degree, by giving more accurate attention to the objects of the senses they have. The blind have often been known to acquire uncommon accuteness in distinguishing things by feeling and hearing; and the deaf are uncommonly quick in reading men's thoughts in their countenance.

A *third* way in which our senses admit of improvement, is, by additional organs or instruments contrived by art. By the invention of optical glasses, and the gradual improvement of them, the natural power of vision is wonderfully improved, and a vast addition made to the stock of knowledge which we acquire by the eye. By speaking trumpets, and ear trumpets, some improvement has been made in the sense of hearing. Whether by similar inventions the other senses may be improved, seems uncertain.

A *fourth* method by which the information got by our senses may be improved, is, by discovering the connection which nature hath established between the sensible qualities of objects and their more latent qualities.

By the sensible qualities of bodies, I understand those that are perceived immediately by the senses, such as their colour, figure, feeling, sound, taste, smell. The various modifications, and various combinations of these, are innumerable; so that there are hardly two individual bodies in nature that may not be distinguished by their sensible qualities.

The latent qualities are such as are not immediately discovered, by our senses; but discovered, sometimes by accident, sometimes by experiment or observation. The most important part of our knowledge of bodies, is the knowledge of the latent qualities of the several species, by which they are adapted to certain purposes, either for food, or medicine, or agriculture, or for the materials or utensils of some art or manufacture.

I am taught, that certain species of bodies have certain latent qualities; but how shall I know that this individual is of such a species? This must be known by the sensible qualities which characterise the species. I must know that this is bread, and that wine, before I eat the one or drink the other. I must know that this is rhubarb, and that opium, before I use the one or the other for medicine.

It is one branch of human knowledge to know the names of the various species of natural and artificial bodies, and to know the sensible qualities by which they are ascertained to be of such a species, and by which they are distinguished from one another. It is another branch of knowledge to know the latent qualities of the several species, and the uses to which they are subservient.

The man who possesses both these branches, is informed by his senses of innumerable things of real moment, which are hid from those who possess only one or neither. This is an improvement in the information got by our senses, which must keep pace with the improvements made in natural history, in natural philosophy, and in the arts.

It would be an improvement still higher, if we were able to discover any connection between the sensible qualities of bodies and their latent qualities, without knowing the species or what may have been discovered with regard to it.

Some philosophers of the first rate have made attempts towards this noble improvement, not without promising hopes of success. Thus the celebrated LINNÆUS has attempted to point out certain sensible qualities by which a plant may very probably be concluded to be poisonous, without knowing its name or species. He has given several other instances, wherein certain medical and œconomical virtues of plants are indicated by their external appearances. SIR ISAAC NEWTON hath attempted to shew, that from the colours of bodies we may form a probable conjecture of the size of their constituent parts, by which the rays of light are reflected.

No man can pretend to set limits to the discoveries that may be made by human genius and industry, of such connections between the latent and the sensible qualities of bodies. A wide field here opens to our view, whose boundaries no man can ascertain, of improvements that may hereafter be made in the information conveyed to us by our senses.

CHAP. XXII.

Of the Fallacy of the Senses.

COMPLAINTS of the fallacy of the senses have been very common in ancient and in modern times, especially among the philosophers: And if we should take for granted all that they have said on this subject, the natural conclusion from it might seem to be, that the senses are given to us by some malignant dæmon on purpose to delude us, rather than that they are formed by the wise and beneficent Author of nature, to give us true information of things necessary to our preservation and happiness.

The whole sect of Atomists among the ancients, led by DEMOCRITUS, and afterwards by EPICURUS maintained, that all the qualities of bodies which the moderns call secondary qualities, to wit, smell, taste, sound, colour, heat, and cold, are mere illusions of sense, and have no real existence. PLATO maintained that we can attain no real knowledge of material things; and that eternal and immutable ideas are the only objects of real knowledge. The Academics and Sceptics anxiously sought for arguments to prove the fallaciousness of our senses, in order to support their favourite doctrine that even in things that seem most evident, we ought to with-hold assent.

Among the Peripatetics we find frequent complaints that the senses often deceive us, and that their testimony is to be suspected, when it is not confirmed by reason, by which the errors of sense may be corrected. This complaint they supported by many common-place instances; such as, the crooked appearance of an oar in water; objects being magnified, and their distance mistaken in a fog; the sun and moon appearing about a foot or two in diameter, while they are really thousands of miles; a square tower being taken at a distance to be round. These, and many similar appearances, they thought to be sufficiently accounted for from the fallacy of the senses: And thus the fallacy of the senses was used as a decent cover to conceal their ignorance of the real causes of such phænomena, and served the same purpose as their occult qualities and substantial forms.

Des Cartes and his followers joined in the same complaint. Antony le Grand, a philosopher of that sect, in the first chapter of his Logic, expresses the sentiments of the sect as follows: "Since all our senses "are fallacious, and we are frequently deceived by "them, common reason advises, that we should not "put too much trust in them, nay, that we should sus"pect falsehood in every thing they represent; for it "is imprudence and temerity to trust to those who "have but once deceived us; and if they err at any "time, they may be believed always to err. They "are given by Nature for this purpose only, to warn "us of what is useful and what is hurtful to us. The "order of Nature is perverted when we put them to "any other use, and apply them for the knowledge of "truth."

When we consider, that the active part of mankind, in all ages from the beginning of the world, have rested their most important concerns upon the testimony of sense, it will be very difficult to reconcile their conduct with the speculative opinion so generally entertained of the fallaciousness of the senses. And it seems to be a very unfavourable account of the workmanship of the Supreme Being, to think that he has given us one faculty to deceive us, to wit, our senses, and another faculty, to wit, our reason, to detect the fallacy.

It deserves, therefore, to be considered, whether the fallaciousness of our senses be not a common error, which men have been led into, from a desire to conceal their ignorance, or to apologise for their mistakes.

There are two powers which we owe to our external senses, sensation, and the perception of external objects.

It is impossible that there can be any fallacy in sensation: For we are conscious of all our sensations, and they can neither be any other in their nature, nor greater or less in their degree than we feel them. It is impossible that a man should be in pain, when he does not feel pain; and when he feels pain, it is impossible that his pain should not be real, and in its degree what it is felt to be; and the same thing may be said of every sensation whatsoever. An agreeable or an uneasy sensation may be forgot when it is past, but when it is present, it can be nothing but what we feel.

If, therefore, there be any fallacy in our senses, it must be in the perception of external objects, which we shall next consider.

And here I grant that we can conceive powers of perceiving external objects more perfect than ours, which, possibly, beings of a higher order may enjoy. We can perceive external objects only by means of bodily organs; and these are liable to various disorders, which sometimes affect our powers of perception. The nerves and brain, which are interior organs of perception, are likewise liable to disorders, as every part of the human frame is.

The imagination, the memory, the judging and reasoning powers, are all liable to be hurt, or even destroyed, by disorders of the body, as well as our powers of perception; but we do not on this account call them fallacious.

Our senses, our memory, and our reason, are all limited and imperfect: This is the lot of humanity: But they are such as the Author of our being saw to be best fitted for us in our present state. Superior natures may have intellectual powers which we have not, or such as we have, in a more perfect degree, and less liable to accidental disorders: But we have no reason to think that God has given fallacious powers to any of his creatures: This would be to think dishonourably of our Maker, and would lay a foundation for universal scepticism.

The appearances commonly imputed to the fallacy of the senses are many, and of different kinds; but I think they may be reduced to the four following classes.

First, Many things called deceptions of the senses are only conclusions rashly drawn from the testimony of the senses. In these cases the testimony of the senses is true, but we rashly draw a conclusion from it, which does not necessarily follow. We are disposed to impute our errors rather to false information than to inconclusive reasoning, and to blame our senses for the wrong conclusions we draw from their testimony.

Thus, when a man has taken a counterfeit guinea for a true one, he says his senses deceived him; but he lays the blame where it ought not to be laid: For we may ask him, Did your senses give a false testimony of the colour, or of the figure, or of the impression? No. But this is all that they testified, and this they testified truly: From these premises you concluded that it was a true guinea, but this conclusion does not follow; you erred therefore, not by relying upon the testimony of sense, but by judging rashly from its testimony: Not only are your senses innocent of this error, but it is only by their information that it can be discovered. If you consult them properly, they will inform you that what you took for a guinea is base metal, or is deficient in weight, and this can only be known by the testimony of sense.

I remember to have met with a man who thought the argument used by Protestants against the Popish doctrine of transubstantiation, from the testimony of our senses, inconclusive; because, said he, instances may be given where several of our senses may deceive us: How do we know then that there may not be cases wherein they all deceive us, and no sense is left to detect the fallacy? I begged of him to know an instance wherein several of our senses deceive us. I take, said he, a piece of soft turf, I cut it into the shape of an apple; with the essence of apples, I give it the smell of an apple; and with paint, I can give it the skin and colour of an apple. Here then is a body, which, if you judge by your eye, by your touch, or by your smell, is an apple.

To this I would answer, that no one of our senses deceives us in this case. My sight and touch testify that it has the shape and colour of an apple: This is true. The sense of smelling testifies that it has the smell of an apple: This is likewise true, and is no deception. Where then lies the deception? It is evident it lies in this, that because this body has some qualities belonging to an apple, I conclude that it is an apple. This is a fallacy, not of the senses, but of inconclusive reasoning.

Many false judgments that are accounted deceptions of sense, arise from our mistaking relative motion for real or absolute motion. These can be no deceptions of sense, because by our senses we perceive only the relative motions of bodies; and it is by reasoning that we infer the real from the relative which we perceive. A little reflection may satisfy us of this.

It was before observed, that we perceive extension to be one sensible quality of bodies, and thence are necessarily led to conceive space, though space be of itself no object of sense. When a body is removed out of its place, the space which it filled remains empty till it is filled by some other body, and would remain if it should never be filled. Before any body existed, the space which bodies now occupy was empty space, capable of receiving bodies; for no body can exist where there is no space to contain it. There is space therefore wherever bodies exist, or can exist.

Hence it is evident that space can have no limits. It is no less evident that it is immoveable. Bodies placed in it are moveable, but the place where they were cannot be moved; and we can as easily conceive a thing to be moved from itself, as one part of space brought nearer to, or removed farther from another.

This space, therefore, which is unlimited and immoveable, is called by philosophers *absolute space*. Absolute, or real motion, is a change of place in absolute space.

Our senses do not testify the absolute motion or absolute rest of any body. When one body removes from another, this may be discerned by the senses; but whether any body keeps the same part of absolute space, we do not perceive by our senses: When one body seems to remove from another, we can infer with certainty that there is absolute motion, but whether in the one or the other, or partly in both, is not discerned by sense.

Of all the prejudices which philosophy contradicts, I believe there is none so general as that the earth keeps its place unmoved. This opinion seems to be universal, till it is corrected by instruction, or by philosophical speculation. Those who have any tincture of education are not now in danger of being held by it, but they find at first a reluctance to believe that there are antipodes; that the earth is spherical, and turns round its axis every day, and round the sun every year: They can recollect the time when reason struggled with prejudice upon these points, and prevailed at length, but not without some effort.

The cause of a prejudice so very general is not unworthy of investigation. But that is not our present business. It is sufficient to observe, that it cannot justly be called a fallacy of sense; because our senses testify only the change of situation of one body in relation to other bodies, and not its change of situation in absolute space. It is only the relative motion of bodies that we perceive, and that we perceive truly. It is the province of reason and philosophy, from the relative motions which we perceive, to collect the real and absolute motions which produce them.

All motion must be estimated from some point or place which is supposed to be at rest. We perceive not the points of absolute space, from which real and absolute motion must be reckoned: And there are obvious reasons that lead mankind in the state of ignorance, to make the earth the fixed place from which they may estimate the various motions they perceive. The custom of doing this from infancy, and of using constantly a language which supposes the earth to be at rest, may perhaps be the cause of the general prejudice in favour of this opinion.

Thus it appears, that if we distinguish accurately between what our senses really and naturally testify, and the conclusions which we draw from their testimony, by reasoning, we shall find many of the errors, called fallacies of the senses, to be no fallacy of the senses, but rash judgments, which are not to be imputed to our senses.

Secondly, Another class of errors imputed to the fallacy of the senses, are those which we are liable to in our acquired perceptions. Acquired perception is not properly the testimony of those senses which God hath given us, but a conclusion drawn from what the senses testify. In our past experience, we have found certain things conjoined with what our senses testify. We are led by our constitution to expect this conjunction in time to come; and when we have often found it in our experience to happen, we acquire a firm belief, that the things which we have found thus conjoined are connected in nature, and that one is a sign of the other. The appearance of the sign immediately produces the belief of its usual attendant, and we think we perceive the one as well as the other.

That such conclusions are formed even in infancy, no man can doubt; nor is it less certain that they are confounded with the natural and immediate perceptions of sense, and in all languages are called by the same name. We are therefore authorised by language to call them perception, and must often do so, or speak unintelligibly. But philosophy teaches us in this, as in many other instances, to distinguish things which the vulgar confound. I have therefore given the name of acquired perception to such conclusions, to distinguish them from what is naturally, originally, and immediately testified by our senses. Whether this acquired perception is to be resolved into some process of reasoning, of which we have lost the remembrance, as some philosophers think, or whether it results from some part of our constitution distinct from reason, as I rather believe, does not concern the present subject.—If the first of these opinions be true, the errors of acquired perception will fall under the first class before mentioned. If not, it makes a distinct class by itself. But whether the one or the other be true, it must be observed, that the errors of acquired perception are not properly fallacies of our senses.

Thus when a globe is set before me, I perceive by my eyes that it has three dimensions and a spherical figure. To say that this is not perception, would be to reject the authority of custom in the use of words, which no wise man will do: But that it is not the testimony of my sense of seeing, every philosopher knows. I see only a circular form, having the light and colour distributed in a certain way over it. But being accustomed to observe this distribution of light and colour only in a spherical body, I immediately, from what I see, believe the object to be spherical, and say that I see or perceive it to be spherical. When a painter, by an exact imitation of that distribution of light and colour, which I have been accustomed to see only in a real sphere, deceives me, so as to make me take that to be a real sphere, which is only a painted one, the testimony of my eye is true; the colour and visible figure of the object is truly what I see it to be: The error lies in the conclusion drawn from what I see, to wit, that the object has three dimensions and a spherical figure. The conclusion is false in this case; but whatever be the origin of this conclusion, it is not properly the testimony of sense.

To this class we must refer the judgments we are apt to form of the distance and magnitude of the heavenly bodies, and of terrestrial objects seen on high.—The mistakes we make of the magnitude and distance of objects seen through optical glasses, or through an atmosphere uncommonly clear, or uncommonly foggy, belong likewise to this class.

The errors we are led into in acquired perception are very rarely hurtful to us in the conduct of life; they are gradually corrected by a more enlarged experience, and a more perfect knowledge of the laws of nature: And the general laws of our constitution, by which we are sometimes led into them, are of the greatest utility.

We come into the world ignorant of every thing, and by our ignorance exposed to many dangers and to many mistakes. The regular train of causes and effects, which Divine Wisdom has established, and which directs every step of our conduct in advanced life, is unknown, until it is gradually discovered by experience.

We must learn much from experience before we can reason, and therefore must be liable to many errors. Indeed, I apprehend, that, in the first part of life, reason would do us much more hurt than good.—Were we sensible of our condition in that period, and capable of reflecting upon it, we should be like a man in the dark, surrounded with dangers, where every step he takes may be into a pit. Reason would direct him to sit down, and wait till he could see about him.

In like manner, if we suppose an infant endowed with reason, it would direct him to do nothing, till he knew what could be done with safety. This he can only know by experiment, and experiments are dangerous. Reason directs, that experiments that are full of danger should not be made without a very urgent cause. It would therefore make the infant unhappy, and hinder his improvement by experience.

Nature has followed another plan. The child, unapprehensive of danger, is led by instinct to exert all his active powers, to try every thing without the cautious admonitions of reason, and to believe every thing that is told him. Sometimes he suffers by his rashness what reason would have prevented: But his suffering proves a salutary discipline, and makes him for the future avoid the cause of it. Sometimes he is imposed upon by his credulity; but it is of infinite benefit to him upon the whole. His activity and credulity are more useful qualities, and better instructors than reason would be; they teach him more in a day than reason would do in a year; they furnish a stock of materials for reason to work upon; they make him easy and happy in a period of his existence, when reason could only serve to suggest a thousand tormenting anxieties and fears: And he acts agreeably to the constitution and intention of nature, even when he does and believes what reason would not justify. So that the wisdom and goodness of the Author of Nature is no less conspicuous in with-holding the exercise of our reason in this period, than in bestowing it when we are ripe for it.

A *third* class of errors, ascribed to the fallacy of the senses, proceeds from ignorance of the laws of nature.

The laws of nature (I mean not moral, but physical laws,) are learned, either from our own experience, or the experience of others, who have had occasion to observe the course of nature.

Ignorance of those laws, or inattention to them, is apt to occasion false judgments with regard to the objects of sense, especially those of hearing and of sight; which false judgments are often, without good reason, called fallacies of sense.

Sounds affect the ear differently, according as the sounding body is before or behind us, on the right hand or on the left, near or at a great distance. We learn, by the manner in which the sound affects the ear, on what hand we are to look for the sounding body; and in most cases we judge right. But we are sometimes deceived by echos, or by whispering gallaries, or speaking trumpets, which return the sound, or alter its direction, or convey it to a distance without diminution.

The deception is still greater, because more uncommon, which is said to be produced by gastriloquists, that is, persons who have acquired the art of modifying their voice, so that it shall affect the ear of the hearers, as if it came from another person, or from the clouds, or from under the earth.

I never had the fortune to be acquainted with any of these artists, and therefore cannot say to what degree of perfection the art may have been carried.

I apprehend it to be only such an imperfect imitation as may deceive those who are inattentive, or under a panic. For if it could be carried to perfection, a gastriloquist would be as dangerous a man in society as was the shepherd Giges, who, by turning a ring upon his finger, could make himself invisible, and by that means, from being the king's shepherd, became king of Lydia.

If the gastriloquists have all been too good men to use their talents to the detriment of others, it might at least be expected that some of them should apply it to their own advantage. If it could be brought to any considerable degree of perfection, it seems to be as proper an engine for drawing money by the exhibition of it, as legerdemain or rope-dancing. But I have never heard of any exhibition of this kind, and therefore am apt to think, that it is too coarse an imitation to bear exhibition even to the vulgar.

Some are said to have the art of imitating the voice of another so exactly, that in the dark they might be taken for the person whose voice they imitate. I am apt to think, that this art also, in the relations made of it, is magnified beyond the truth, as wonderful relations are apt to be, and that an attentive ear would be able to distinguish the copy from the original.

It is indeed a wonderful instance of the accuracy, as well as of the truth of our senses, in things that are of real use in life, that we are able to distinguish all our acquaintance by their countenance, by their voice, and by their hand-writing, when at the same time we are often unable to say by what minute difference the distinction is made; and that we are so very rarely deceived in matters of this kind, when we give proper attention to the informations of sense.

However, if any case should happen, in which sounds produced by different causes are not distinguishable by the ear, this may prove that our senses are imperfect, but not that they are fallacious. The ear may not be able to draw the just conclusion, but it is only our ignorance of the laws of sound that leads us to a wrong conclusion.

Deceptions of sight, arising from ignorance of the laws of nature, are more numerous, and more remarkable than those of hearing.

The rays of light, which are the means of seeing, pass in right lines from the object to the eye, when they meet with no obstruction; and we are by nature led to conceive the visible object to be in the direction of the rays that come to the eye. But the rays may be reflected, refracted, or inflicted in their passage from the object to the eye, according to certain fixed laws of nature; by which means their direction may be changed, and consequently the apparent place, figure, or magnitude of the object.

Thus a child seeing himself in a mirror, thinks he sees another child behind the mirror, that imitates all his motions. But even a child soon gets the better of this deception, and knows that he sees himself only.

All the deceptions made by telescopes, microscopes, camera obscuras, magic lanthorns, are of the same kind, though not so familiar to the vulgar. The ignorant may be deceived by them; but to those who are acquainted with the principles of optics, they give just and true information; and the laws of nature by which they are produced, are of infinite benefit to mankind.

There remains another class of errors, commonly called deceptions of sense, and the only one, as I apprehend, to which that name can be given with propriety: I mean such as proceed from some disorder or preternatural state, either of the external organ, or of the nerves and brain, which are internal organs of perception.

In a delirium, or in madness, perception, memory, imagination, and our reasoning powers, are strangely disordered and confounded. There are likewise disorders which affect some of our senses, while others are sound. Thus, a man may feel pain in his toes after the leg is cut off. He may feel a little ball double, by crossing his fingers. He may see an object double, by not directing both eyes properly to it.

By pressing the ball of his eye, he may see colours that are not real. By the jaundice in his eyes, he may mistake colours. These are more properly deceptions of sense than any of the classes before mentioned.

We must acknowledge it to be the lot of human nature, that all the human faculties are liable, by accidental causes, to be hurt, and unfitted for their natural functions, either wholly or in part: But as this imperfection is common to them all, it gives no just ground for accounting any one of them fallacious more than another.

Upon the whole, it seems to have been a common error of philosophers, to account the senses fallacious. And to this error they have added another, that one use of reason is to detect the fallacies of sense.

It appears, I think, from what has been said, that there is no more reason to account our senses fallacious, than our reason, our memory, or any other faculty of judging which nature hath given us. They are all limited and imperfect; but wisely suited to the present condition of man. We are liable to error and wrong judgment in the use of them all; but as little in the informations of sense as in the deductions of reasoning. And the errors we fall into with regard to objects of sense are not corrected by reason, but by more accurate attention to the informations we may receive by our senses themselves.

Perhaps the pride of philosophers may have given occasion to this error. Reason is the faculty wherein they assume a superiority to the unlearned. The informations of sense are common to the philosopher and to the most illiterate: They put all men upon a level, and therefore are apt to be undervalued. We must, however, be beholden to the informations of sense for the greatest and most interesting part of our knowledge. The wisdom of nature has made the most useful things most common, and they ought not to be despised on that account. Nature likewise forces our belief in those informations, and all the attempts of philosophy to weaken it are fruitless and vain.

I add only one observation to what has been said upon this subject. It is, that there seems to be a contradiction between what philosophers teach concerning ideas, and their doctrine of the fallaciousness of the senses. We are taught that the office of the senses is only to give us the ideas of external objects. If this be so, there can be no fallacy in the senses. Ideas can neither be true nor false. If the senses testify nothing, they cannot give false testimony. If they are not judging faculties, no judgment can be imputed to them, whether false or true. There is, therefore, a contradiction between the common doctrine concerning ideas, and that of the fallaciousness of the senses. Both may be false, as I believe they are, but both cannot be true.

ESSAY III.

OF MEMORY.

CHAP. I.

Things Obvious and Certain with regard to Memory.

N the gradual progress of man, from infancy to maturity, there is a certain order in which his faculties re unfolded, and this seems to be the best order we an follow in treating of them.

The external senses appear first; memory soon folows, which we are now to consider.

It is by memory that we have an immediate knowedge of things past: The senses give us information f things only as they exist in the present moment; nd this information, if it were not preserved by memory, would vanish instantly, and leave us as ignorant s if it had never been.

Memory must have an object. Every man who emembers must remember something, and that which he remembers is called the object of his remembrance. In this, memory agrees with perception, ut differs from sensation, which has no object but the feeling itself.

Every man can distinguish the thing remembered rom the remembrance of it. We may remember any thing which we have seen, or heard, or known, or done, or suffered; but the remembrance of it is a particular act of the mind which now exists, and of which we are conscious. To confound these two is an absurdity, which a thinking man could not be led into, but by some false hypothesis which hinders him from reflecting upon the thing which he would explain by it.

In memory we do not find such a train of operations connected by our constitution as in perception. When we perceive an object by our senses, there is, first, some impression made by the object upon the organ of sense, either immediately or by means of some medium. By this an impression is made upon the nerves and brain, in consequence of which we feel some sensation; and that sensation is attended by that conception and belief of the external object which we call perception. These operations are so connected in our constitution, that it is difficult to disjoin them in our conceptions, and to attend to each without confounding it with the others. But in the operations of memory we are free from this embarrassment; they are easily distinguished from all other acts of the mind, and the names which denote them are free from all ambiguity.

The object of memory, or thing remembered, must be something that is past; as the object of perception and of consciousness must be something which is present: What now is, cannot be an object of memory; neither can that which is past and gone be an object of perception or of consciousness.

Memory is always accompanied with the belief of that which we remember, as perception is accompanied with the belief of that which we perceive, and consciousness with the belief of that whereof we are conscious. Perhaps in infancy, or in a disorder of mind, things remembered may be confounded with those which are merely imagined ; but in mature years, and in a sound state of mind, every man feels that he must believe what he distinctly remembers, though he can give no other reason of his belief, but that he remembers the thing distinctly ; whereas, when he merely imagines a thing ever so distinctly, he has no belief of it upon that account.

This belief, which we have from distinct memory, we account real knowledge, no less certain than if it was grounded on demonstration ; no man in his wits calls it in question, or will hear any argument against it. The testimony of witnesses in causes of life and death depends upon it, and all the knowledge of mankind of past events is built on this foundation.

There are cases in which a man's memory is less distinct and determinate, and where he is ready to allow that it may have failed him ; but this does not in the least weaken its credit, when it is perfectly distinct.

Memory implies a conception and belief of past duration ; for it is impossible that a man should remember a thing distinctly, without believing some interval of duration, more or less, to have passed between the time it happened, and the present moment ; and I think it is impossible to shew how we could acquire a notion of duration if we had no memory.

Things remembered must be things formerly perceived or known. I remember the transit of Venus over the sun in the year 1769. I must therefore have perceived it at the time it happened, otherwise I could not now remember it. Our first acquaintance with any object of thought cannot be by remembrance.

Memory can only produce a continuance or renewal of a former acquaintance with the thing remembered.

The remembrance of a past event is necessarily accompanied with the conviction of our own existence at the time the event happened. I cannot remember a thing that happened a year ago, without a conviction as strong as memory can give, that I, the same identical person who now remember that event, did then exist.

What I have hitherto said concerning memory, I consider as principles which appear obvious and certain to every man who will take the pains to reflect upon the operations of his own mind. They are facts of which every man must judge by what he feels; and they admit of no other proof but an appeal to every man's own reflection. I shall therefore take them for granted in what follows, and shall first draw some conclusions from them, and then examine the theories of philosophers concerning memory, and concerning duration, and our personal identity, of which we acquire the knowledge by memory.

CHAP. II.

Memory an Original Faculty.

FIRST, I think it appears that memory is an original faculty given us by the Author of our being, of which we can give no account, but that we are so made.

The knowledge which I have of things past, by my memory, seems to me as unaccountable as an immediate knowledge would be of things to come; and I can give no reason why I should have the one and not the other, but that such is the will of my Maker. I find in my mind a distinct conception, and a firm belief of a series of past events; but how this is produced I know not. I call it memory, but this is only giving a name to it; it is not an account of its cause. I believe most firmly what I distinctly remember; but I can give no reason of this belief. It is the inspiration of the Almighty that gives me this understanding.

When I believe the truth of a mathematical axiom, or of a mathematical proposition, I see that it must be so: Every man who has the same conception of it sees the same. There is a necessary and an evident connection between the subject and the predicate of the proposition; and I have all the evidence to support my belief which I can possibly conceive.

When I believe that I washed my hands and face this morning, there appears no necessity in the truth of this proposition. It might be, or it might not be. A man may distinctly conceive it without believing it at all. How then do I come to believe it? I remember it distinctly. This is all I can say. This remembrance is an act of my mind. It is impossible that this act should be, if the event had not happened. I confess I do not see any necessary connection between the one and the other. If any man can shew such a necessary connection, then I think that belief which we have of what we remember will be fairly accounted for; but if this cannot be done, that belief is unaccountable, and we can say no more but that it is the result of our constitution.

Perhaps it may be said, that the experience we have had of the fidelity of memory is a good reason for relying upon its testimony. I deny not that this may be a reason to those who have had this experience, and who reflect upon it. But I believe there are few who ever thought of this reason, or who found any need of it. It must be some very rare occasion that leads a man to have recourse to it; and in those who have done so, the testimony of memory was believed before the experience of its fidelity, and that belief could not be caused by the experience which came after it.

We know some abstract truths, by comparing the terms of the proposition which expresses them, and perceiving some necessary relation or agreement between them. It is thus I know that two and three make five; that the diameters of a circle are all equal. Mr LOCKE having discovered this source of knowledge, too rashly concluded that all human knowledge might be derived from it; and in this he has been followed very generally; by Mr HUME in particular.

But I apprehend, that our knowledge of the existence of things contingent can never be traced to this source. I know that such a thing exists, or did exist. This knowledge cannot be derived from the perception of a necessary agreement between existence and the thing that exists, because there is no such necessary agreement; and therefore no such agreement can be perceived either immediately, or by a chain of reasoning. The thing does not exist necessarily, but by the will and power of him that made it; and there is no contradiction follows from supposing it not to exist.

Whence I think it follows, that our knowledge of the existence of our own thoughts, of the existence of all the material objects about us, and of all past contingencies, must be derived, not from a perception of necessary relations or agreements, but from some other source.

Our Maker has provided other means for giving us the knowledge of these things; means which perfectly answer their end, and produce the effect intended by them. But in what manner they do this, is, I fear, beyond our skill to explain. We know our own thoughts, and the operations of our minds, by a power which we call consciousness: But this is only giving a name to this part of our frame. It does not explain its fabric, nor how it produces in us an irresistible conviction of its informations. We perceive material objects and their sensible qualities by our senses; but how they give us this information, and how they produce our belief in it, we know not. We know many past events by memory; but how it gives this information, I believe, is inexplicable.

It is well known what subtile disputes were held through all the scholastic ages, and are still carried on about the prescience of the Deity. ARISTOTLE had taught, that there can be no certain foreknowledge of things contingent; and in this he has been very generally followed, upon no other grounds, as I apprehend, but that we cannot conceive how such things should be foreknown, and therefore conclude it to be impossible. Hence has arisen an opposition and supposed inconsistency between Divine prescience and human liberty. Some have given up the first in favour of the last, and others have given up the last in order to support the first.

It is remarkable, that these disputants have never apprehended that there is any difficulty in reconciling with liberty the knowledge of what is past, but only of what is future. It is prescience only, and not memory, that is supposed to be hostile to liberty, and hardly reconcileable to it.

Yet I believe the difficulty is perfectly equal in the one case and in the other. I admit, that we cannot account for prescience of the actions of a free agent. But I maintain, that we can as little account for memory of the past actions of a free agent. If any man thinks he can prove that the actions of a free agent cannot be foreknown, he will find the same arguments of equal force to prove that the past actions of a free agent cannot be remembered. It is true, that what is past did certainly exist. It is no less true, that what is future will certainly exist. I know no reasoning from the constitution of the agent, or from his circumstances, that has not equal strength, whether it be applied to his past or to his future actions. The past was, but now is not. The future will be, but now is not. The present is equally connected, or unconnected with both.

The only reason why men have apprehended so great disparity in cases so perfectly like, I take to be this, That the faculty of memory in ourselves convinces us from fact, that it is not impossible that an intelligent being, even a finite being, should have certain knowledge of past actions of free agents, without tracing them from any thing necessarily connected with them. But having no prescience in ourselves corresponding to our memory of what is past, we find great difficulty in admitting it to be possible even in the Supreme Being.

A faculty which we possess in some degree, we easily admit that the Supreme Being may possess in a more perfect degree; but a faculty, which has nothing corresponding to it in our constitution, we will hardly allow to be possible. We are so constituted as to have an intuitive knowledge of many things past; but we have no intuitive knowledge of the future. We might perhaps have been so constituted as to have an intuitive knowledge of the future, but not of the past; nor would this constitution have been more unaccountable than the present, though it might be much more in convenient. Had this been our constitution, we should have found no difficulty in admitting that the Deity may know all things future, but very much in admitting his knowledge of things that are past.

Our original faculties are all unaccountable. Of these memory is one. He only who made them, comprehends fully how they are made, and how they produce in us, not only a conception, but a firm belief and assurance of things which it concerns us to know.

CHAP. III.

Of Duration.

FROM the principles laid down in the first chapter of this Essay, I think it appears, that our notions of duration, as well as our belief of it, is got by the faculty of memory. It is essential to every thing remembered that it be something which is past; and we cannot conceive a thing to be past, without conceiving some duration, more or less, between it and the present. As soon, therefore, as we remember any thing, we must have both a notion and a belief of duration. It is necessarily suggested by every operation of our memory; and to that faculty it ought to be ascribed. This is therefore a proper place to consider what is known concerning it.

Duration, extension, and number, are the measures of all things subject to mensuration. When we apply them to finite things which are measured by them, they seem of all things to be the most distinctly conceived, and most within the reach of human understanding.

Extension having three dimensions, has an endless variety of modifications, capable of being accurately defined; and their various relations furnish the human mind with its most ample field of demonstrative reasoning. Duration having only one dimension, has fewer modifications; but these are clearly understood; and their relations admit of measure, proportion, and demonstrative reasoning.

Number is called discrete quantity, bacause it is compounded of units, which are all equal and similar, and it can only be divided into units. This is true, in some sense, even of fractions of unity, to which we now commonly give the name of number. For in every fractional number the unit is supposed to be subdivided into a certain number of equal parts, which are the units of that denomination, and the fractions of that denomination are only divisible into units of the same denomination. Duration and extension are not discrete, but continued quantity. They consist of parts perfectly similar, but divisible without end.

In order to aid our conception of the magnitude and proportions of the various intervals of duration, we find it necessary to give a name to some known portion of it, such as an hour, a day, a year. These we consider as units, and by the number of them contained in a larger interval, we form a distinct conception of its magnitude. A similar expedient we find necessary to give us a distinct conception of the magnitudes and proportions of things extended. Thus, number is found necessary, as a common measure of extension and duration. But this perhaps is owing to the weakness of our understanding. It has even been discovered, by the sagacity of Mathematicians, that this expedient does not in all cases answer its intention. For there are proportions of continued quantity, which cannot be perfectly expressed by numbers; such as that between the diagonal and side of a square, and many others.

The parts of duration have to other parts of it the relations of prior and posterior, and to the present they have the relations of past and future. The notion of past is immediately suggested by memory, as has been before observed. And when we have got the notions of present and past, and of prior and posterior, we can from these frame a notion of the future; for the future is that which is posterior to the present. Nearness and distance are relations equally applicable to time and to place. Distance in time, and distance in place, are things so different in their nature, and so like in their relation, that it is difficult to determine whether the name of distance is applied to both in the same or an analogical sense.

The extension of bodies which we perceive by our senses, leads us necessarily to the conception and belief of a space, which remains immoveable when the body is removed; and the duration of events which we remember leads us necessarily to the conception and belief of a duration, which would have gone on uniformly, though the event had never happened.

Without space there can be nothing that is extended. And without time there can be nothing that hath duration. This I think undeniable. And yet we find, that extension and duration are not more clear and intelligible than space and time are dark and difficult objects of contemplation.

As there must be space wherever any thing extended does or can exist, and time when there is or can be any thing that has duration, we can set no bounds to either, even in our imagination. They defy all limitation. The one swells in our conception to immensity, the other to eternity.

An eternity past is an object which we cannot comprehend; but a beginning of time, unless we take it in a figurative sense, is a contradiction. By a common figure of speech, we give the name of time to those motions and revolutions by which we measure it, such as days and years. We can conceive a beginning of these sensible measures of time, and say that there was a time when they were not, a time undistinguished by any motion or change; but to say that there was a time before all time, is a contradiction.

All limited duration is comprehended in time, and all limited extension in space. These, in their capacious womb, contain all finite existences, but are contained by none. Created things have their particular place in space, and their particular place in time; but time is every where, and space at all times. They embrace each the other, and have that mysterious union which the schoolmen conceived between soul and body. The whole of each is in every part of the other.

We are at a loss to what category or class of things we ought to refer them. They are not beings, but rather the receptacles of every created being, without which it could not have had the possibility of existence. Philosophers have endeavoured to reduce all the objects of human thought to these three classes, of substances, modes, and relations. To which of them shall we refer time, space, and number, the most common objects of thought?

Sir ISAAC NEWTON thought, that the Deity, by existing every where, and at all times, constitutes time and space, immensity and eternity. This probably suggested to his great friend Dr CLARKE what he calls the argument *a priori* for the existence of any immense and eternal Being. Space and time, he thought, are only abstract or partial conceptions of an immensity and eternity, which forces itself upon our belief. And as immensity and eternity are not substances, they must be the attributes of a Being, who is necessarily immense and eternal. These are the speculations of men of superior genius. But whether they be as solid as they are sublime, or whether they be the wanderings of imagination in a region beyond the limits of human understanding, I am unable to determine.

The schoolmen made eternity ~~to be~~ a *nunc stans*, that is, a moment of time, that stands still. This was to put a spoke into the wheel of time, and might give satisfaction to those who are to be satisfied by words without meaning. But I can as easily believe a circle to be a square as time to stand still.

Such paradoxes and riddles, if I may so call them, men are involuntarily led into when they reason about time and space, and attempt to comprehend their nature. They are probably things of which the human faculties give an imperfect and an inadequate conception. Hence difficulties arise which we in vain attempt to overcome, and doubts which we are unable to resolve. Perhaps some faculty which we possess not, is necessary to remove the darkness which hangs over them, and makes us so apt to bewilder ourselves when we reason about them.

CHAP. IV.

Of Identity.

THE conviction which every man has of his identity, as far back as his memory reaches, needs no aid of philosophy to strengthen it, and no philosophy can weaken it, without first producing some degree of insanity.

The philosopher, however, may very properly consider this conviction as a phænomenon of human nature worthy of his attention. If he can discover it cause, an addition is made to his stock of knowledge: If not, it must be held as a part of our original constitution, or an effect of that constitution produced in a manner unknown to us.

We may observe, first of all, that this conviction is indispensably necessary to all exercise of reason. The operations of reason, whether in action or in speculation; are made up of successive parts. The antecedent are the foundation of the consequent, and without the conviction that the antecedent have been seen or done by me, I could have no reason to proceed to the consequent, in any speculation, or in any active project whatever.

There can be no memory of what is past without the conviction that we existed at the time remembered. There may be good arguments to convince me that I existed before the earliest thing I can remember; but to suppose that my memory reaches a moment farther back than my belief and conviction of my existence, is a contradiction.

The moment a man loses this conviction, as if he had drunk the water of Lethe, past things are done away; and, in his own belief, he then begins to exist. Whatever was thought, or said, or done, or suffered, before that period, may belong to some other person; but he can never impute it to himself, or take any subsequent step that supposes it to be his doing.

From this it is evident, that we must have the conviction of our own continued existence and identity, as soon as we are capable of thinking or doing any thing, on account of what we have thought, or done, or suffered before; that is, as soon as we are reasonable creatures.

That we may form as distinct a notion as we are able of this phænomenon of the human mind, it is proper to consider what is meant by identity in general, what by our own personal identity, and how we are led into that invincible belief and conviction which every man has of his own personal identity, as far as his memory reaches.

Identity in general, I take to be a relation between a thing which is known to exist at one time, and a thing which is known to have existed at another time. If you ask whether they are one and the same, or two different things, every man of common sense understands the meaning of your question perfectly — Whence we may infer with certainty, that every man of common sense has a clear and distinct notion of identity.

If you ask a definition of identity, I confess I can give none; it is too simple a notion to admit of logical definition: I can say it is a relation, but I cannot find words to express the specific difference between this and other relations, though I am in no danger of confounding it with any other. I can say that diversity is a contrary relation, and that similitude and dissimilitude are another couple of contrary relations, which every man easily distinguishes in his conception from identity and diversity.

I see evidently that identity supposes an uninterrupted continuance of existence. That which hath ceased to exist, cannot be the same with that which afterwards begins to exist; for this would be to suppose a being to exist after it ceased to exist, and to have had existence before it was produced, which are manifest contradictions. Continued uninterrupted existence is therefore necessarily implied in identity.

Hence we may infer, that identity cannot, in its proper sense, be applied to our pains, our pleasures, our thoughts, or any operation of our minds. The pain felt this day is not the same individual pain which I felt yesterday, though they may be similiar in kind and degree, and have the same cause. The same may be said of every feeling, and of every operation of mind: They are all successive in their nature, like time itself, no two moments of which can be the same moment.

It is otherwise with the parts of absolute space.— They always are, and were, and will be the same. So far, I think, we proceed upon clear ground in fixing the notion of identity in general.

It is perhaps more difficult to ascertain with precision the meaning of personality; but it is not necessary in the present subject: It is sufficient for our purpose to observe, that all mankind place their personality in something that cannot be divided, or consist of parts. A part of a person is a manifest absurdity.

When a man loses his estate, his health, his strength, he is still the same person, and has lost nothing of his personality. If he has a leg or an arm cut off, he is the same person he was before. The amputated member is no part of his person, otherwise it would have a right to a part of his estate, and be liable for a part of his engagements: It would be entitled to a share of his merit and demerit, which is manifestly absurd. A person is something indivisible, and is what LEIBNITZ calls a *monad*.

My personal identity, therefore, implies the continued existence of that indivisible thing which I call *myself*. Whatever this self may be, it is something which thinks, and deliberates, and resolves, and acts, and suffers. I am not thought, I am not action, I am not feeling; I am something that thinks, and acts, and suffers. My thoughts, and actions, and feelings, change every moment; they have no continued, but a successive existence; but that *self* or *I*, to which they belong, is permanent, and has the same relation to all the succeeding thoughts, actions, and feelings, which I call mine.

Such are the notions that I have of my personal identity. But perhaps it may be said, this may all be fancy without reality. How do you know; what evidence have you, that there is such a permanent self which has a claim to all the thoughts, actions, and feelings, which you call yours?

To this I answer, that the proper evidence I have of all this is remembrance. I remember that twenty years ago I conversed with such a person; I remember several things that passed in that conversation; my memory testifies, not only that this was done, but that it was done by me who now remember it: If it was done by me, I must have existed at that time, and continued to exist from that time to the present: If the identical person whom I call myself, had not a part in that conversation, my memory is fallacious; it gives a distinct and positive testimony of what is not true. Every man in his senses believes what he distinctly remembers, and every thing he remembers convinces him that he existed at the time remembered.

Although memory gives the most irresistible evidence of my being the identical person that did such a thing, at such a time, I may have other good evidence of things which befel me, and which I do not remember: I know who bare me, and suckled me, but I do not remember these events.

It may here be observed, (though the observation would have been unnecessary, if some great philosophers had not contradicted it,) that it is not my remembering any action of mine that makes me to be the person who did it. This remembrance makes me to know assuredly that I did it; but I might have done it, though I did not remember it. That relation to me, which is expressed by saying that I did it, would be the same, though I had not the least remembrance of it. To say that my remembering that I did such a thing, or, as some choose to express it, my being conscious that I did it, makes me to have done it, appears to me as great an absurdity as it would be to say, that my belief that the world was created, made it to be created.

When we pass judgment on the identity of other persons besides ourselves, we proceed upon other grounds, and determine from a variety of circumstances, which sometimes produce the firmest assurance, and sometimes leave room for doubt. The identity of persons has often furnished matter of serious litigation before tribunals of justice. But no man of a sound mind ever doubted of his own identity, as far as he distinctly remembered.

The identity of person is a perfect identity; wherever it is real, it admits of no degrees; and it is impossible that a person should be in part the same, and in part different; because a person is a *monad*, and is not divisible into parts. The evidence of identity in other persons besides ourselves, does indeed admit of all degrees, from what we account certainty, to the least degree of probability. But still it is true, that the same person is perfectly the same, and cannot be so in part, or in some degree only.

For this cause, I have first considered personal identity, as that which is perfect in its kind, and the natural measure of that which is imperfect.

We probably at first derive our notion of identity from that natural conviction which every man has from the dawn of reason of his own identity and continued existence. The operations of our minds are all successive, and have no continued existence. But the thinking being has a continued existence, and we have an invincible belief, that it remains the same when all its thoughts and operations change.

Our judgments of the identity of objects of sense, seem to be formed much upon the same grounds as our judgments of the identity of other persons besides ourselves.

Wherever we observe great similarity, we are apt to presume identity, if no reason appears to the contrary. Two objects ever so like, when they are perceived at the same time, cannot be the same: But if they are presented to our senses at different times, we are apt to think them the same, merely from their similarity.

Whether this be a natural prejudice, or from whatever cause it proceeds, it certainly appears in children from infancy; and, when we grow up, it is confirmed in most instances by experience: For we rarely find two individuals of the same species that are not distinguishable by obvious differences.

A man challenges a thief whom he finds in possession of his horse or his watch, only on similarity. When the watchmaker swears that he sold this watch to such a person, his testimony is grounded on similarity. The testimony of witnesses to the identity of a person is commonly grounded on no other evidence.

Thus it appears, that the evidence we have of our own identity, as far back as we remember, is totally of a different kind from the evidence we have of the identity of other persons, or of objects of sense. The first is grounded on memory, and gives undoubted certainty. The last is grounded on similarity, and on other circumstances, which in many cases are not so decisive as to leave no room for doubt.

It may likewise be observed, that the identity of objects of sense is never perfect. All bodies, as they consist of innumerable parts that may be disjoined from them by a great variety of causes, are subject to continual changes of their substance, increasing, diminishing, changing insensibly. When such alterations are gradual, because language could not afford a different name for every different state of such a changeable being, it retains the same name, and is considered as the same thing. Thus we say of an old regiment, that it did such a thing a century ago, though there now is not a man alive who then belonged to it. We say a tree is the same in the seed-bed and in the forest. A ship of war, which has successively changed her anchors, her tackle, her sails, her masts, her planks, and her timbers, while she keeps the same name, is the same.

The identity therefore which we ascribe to bodies, whether natural or artificial, is not perfect identity; it is rather something which, for the conveniency of speech, we call identity. It admits of a great change of the subject, providing the change be gradual, sometimes even of a total change. And the changes which in common language are made consistent with identity, differ from those that are thought to destroy it, not in kind, but in number and degree. It has no fixed nature when applied to bodies; and questions about the identity of a body are very often questions about words. But identity, when applied to persons, has no ambiguity, and admits not of degrees, or of more and less: It is the foundation of all rights and obligations, and of all accountableness; and the notion of it is fixed and precise.

CHAP. V.

Mr Locke's *Account of the Origin of our Ideas, and particularly of the Idea of Duration.*

IT was a very laudable attempt of Mr Locke "to inquire into the original of those ideas, notions, or "whatever you please to call them, which a man observes, and is conscious to himself he has in his mind; "and the ways whereby the understanding comes to "be furnished with them." No man was better qualified for this investigation; and I believe no man ever engaged in it with a more sincere love of truth.

His success, though great, would, I apprehend, have been greater, if he had not too early formed a system, or hypothesis, upon this subject, without all the caution and patient induction, which is necessary in drawing general conclusions from facts.

The sum of his doctrine I take to be this, "That all our ideas or notions may be reduced to two classes, the simple and the complex: That the simple are purely the work of nature, the understanding being merely passive in receiving them: That they are all suggested by two powers of the mind, to wit, sensation and reflection; and that they are the materials of all our knowledge. That the other class of complex ideas are formed by the understanding itself, which being once stored with simple ideas of sensation and reflection, has the power to repeat, to compare, and to combine them even to an almost infinite variety, and so can make at pleasure new complex ideas: But that it is not in the power of the most exalted wit, or enlarged understanding, by any quickness or variety of thought, to invent or frame one new simple idea in the mind, not taken in by the two ways before mentioned. That as our power over the material world reaches only to the compounding, dividing, and putting together, in various forms, the matter which God has made, but reaches not to the production or annihilation of a single atom; so we may compound, compare, and abstract the original and simple ideas which nature has given us; but are unable to fashion in our understanding any simple idea, not received in by our senses from external objects, or by reflection from the operations of our own mind about them."

This account of the origin of all our ideas is adopted by Bishop Berkeley and Mr Hume; but some very ingenious philosophers, who have a high esteem of Locke's Essay, are dissatisfied with it.

Dr Hutchinson of Glasgow, in his Enquiry into the Ideas of Beauty and Virtue, has endeavoured to shew, that these are original and simple ideas, furnished by original powers, which he calls the sense of beauty and the moral sense.

Dr Price, in his Review of the Principle Questions and Difficulties in Morals, has observed very justly, that if we take the words *sensation* and *reflection*, as Mr Locke has defined them in the beginning of his excellent Essay, it will be impossible to derive some of the most important of our ideas from them; and that, by the understanding, that is, by our judging and reasoning power, we are furnished with many simple and original notions.

Mr Locke says, that by reflection he would be understood to mean, "the notice which the mind takes "of its own operations, and the manner of them."— This, I think, we commonly call consciousness; from which, indeed, we derive all the notions we have of the operations of our own minds; and he often speaks of the operations of our own minds, as the only objects of reflection.

When reflection is taken in this confined sense, to say, that all our ideas are ideas either of sensation or reflection, is to say, that every thing we can conceive is either some object of sense, or some operation of our own minds, which is far from being true.

But the word reflection is commonly used in a much more extensive sense; it is applied to many operations of the mind, with more propriety than to that of consciousness. We reflect, when we remember, or call to mind what is past, and survey it with attention. We reflect, when we define, when we distinguish, when we judge, when we reason, whether about things material or intellectual.

When reflection is taken in this sense, which is more common, and therefore more proper than the sense which Mr LOCKE has put upon it, it may be justly said to be the only source of all our distinct and accurate notions of things. For, although our first notions of material things are got by the external senses, and our first notions of the operations of our own minds by consciousness, these first notions are neither simple nor clear. Our senses and our consciousness are continually shifting from one object to another; their operations are transient and momentary, and leave no distinct notion of their objects, until they are recalled by memory, examined with attention, and compared with other things.

This reflection is not one power of the mind; it comprehends many; such as recollection, attention, distinguishing, comparing, judging. By these powers our minds are furnished, not only with many simple and original notions, but with all our notions which are accurate and well defined, and which alone are the proper materials of reasoning. Many of these, are neither notions of the objects of sense, nor of the operations of our own minds, and therefore neither ideas of sensation, nor of reflection, in the sense that Mr LOCKE gives to reflection. But if any one chooses to call them ideas of reflection, taking the word in the more common and proper sense, I have no objection.

Mr LOCKE seems to me to have used the word reflection sometimes in that limited sense which he has given to it in the definition before mentioned, and sometimes to have fallen unawares into the common sense of the word; and by this ambiguity his account of the origin of our ideas is darkened and perplexed.

Having premised these things in general of Mr LOCKE's theory of the origin of our ideas or notions, I proceed to some observations on his account of the idea of duration.

"Reflection, he says, upon the train of ideas, which "appear one after another in our minds, is that which "furnishes us with the idea of succession; and the "distance between any two parts of that succession, "is that we call duration."

If it be meant that the idea of succession is prior to that of duration, either in time, or in the order of nature, this, I think, is impossible, because succession, as Dr PRICE justly observes, presupposes duration, and can in no sense be prior to it; and therefore it would be more proper to derive the idea of succession from that of duration.

But how do we get the idea of succession? It is, says he, by reflecting upon the train of ideas, which appear one after another in our minds.

Reflecting upon the train of ideas can be nothing but remembering it, and giving attention to what our memory testifies concerning it; for if we did not remember it, we could not have a thought about it.—So that it is evident, that this reflection includes remembrance, without which there could be no reflection on what is past, and consequently no idea of succession.

It may here be observed, that if we speak strictly and philosophically, no kind of succession can be an object, either of the senses, or of consciousness; because the operations of both are confined to the present point of time, and there can be no succession in a point of time; and on that account the motion, of a body, which is a successive change of place, could not be observed by the senses alone without the aid of memory.

As this observation seems to contradict the common sense and common language of mankind, when they affirm that they see a body move, and hold motion to be an object of the senses, it is proper to take notice, that this contradiction between the philosopher and the vulgar is apparent only, and not real. It arises from this, that philosophers and the vulgar differ in the meaning they put upon what is called the *present* time, and are thereby led to make a different limit between sense and memory.

Philosophers give the name of the *present* to that indivisible point of time, which divides the future from the past: But the vulgar find it more convenient in the affairs of life, to give the name of *present* to a portion of time, which extends more or less, according to circumstances, into the past or the future. Hence we say, the present hour, the present year, the present century, though one point only of these periods can be present in the philosophical sense.

It has been observed by grammarians, that the present tense in verbs is not confined to an indivisible point of time, but it is so far extended as to have a beginning, a middle, and an end; and that in the most copious and accurate languages, these different parts of the present are distinguished by different forms of the verb.

As the purposes of conversation make it convenient to extend what is called the present, the same reason leads men to extend the province of sense, and to carry its limit as far back as they carry the present.—Thus a man may say, I saw such a person just now; it would be ridiculous to find fault with this way of speaking, because it is authorised by custom, and has a distinct meaning: But if we speak philosophically, the senses do not testify what we saw, but only what we see; what I saw last moment I consider as the testimony of sense, though it is now only the testimony of memory.

There is no necessity in common life of dividing accurately the provinces of sense and of memory; and therefore we assign to sense, not an indivisible point of time, but that small portion of time which we call the present, which has a beginning, a middle, and an end.

Hence it is easy to see, that though in common language we speak with perfect propriety and truth, when we say, that we see a body move, and that motion is an object of sense, yet when as philosophers we distinguish accurately the province of sense from that of memory, we can no more see what is past, though but a moment ago, than we can remember what is present; so that speaking philosophically, it is only by the aid of memory that we discern motion, or any succession whatsoever: We see the present place of the body; we remember the successive advance it made to that place: The first can then only give us a conception of motion, when joined to the last.

Having considered the account given by Mr LOCKE, of the idea of succession, we shall next consider how, from the idea of succession, he derives the idea of duration.

" The distance, he says, between any parts of that " succession, or between the appearance of any two " ideas in our minds, is that we call duration."

To conceive this the more distinctly, let us call the distance between an idea and that which immediately succeeds it, one element of duration; the distance between an idea and the second that succeeds it, two elements, and so on: If ten such elements make duration, then one must make duration, otherwise duration must be made up of parts that have no duration, which is impossible.

For, suppose a succession of as many ideas as you please, if none of these ideas have duration, nor any interval of duration be between one and another, then it is perfectly evident there can be no interval of duration between the first and the last, how great soever their number be. I conclude therefore, that there must be duration in every single interval or element of which the whole duration is made up. Nothing indeed is more certain, than that every elementary part of duration must have duration, as every elementary part of extension must have extension.

Now it must be observed, that in these elements of duration, or single intervals of successive ideas, there is no succession of ideas, yet we must conceive them to have duration; whence we may conclude with certainty, that there is a conception of duration, where there is no succession of ideas in the mind.

We may measure duration by the succession of thoughts in the mind, as we measure length by inches or feet; but the notion or idea of duration must be antecedent to the mensuration of it, as the notion of length is antecedent to its being measured.

Mr LOCKE draws some conclusions from his account of the idea of duration, which may serve as a touchstone to discover how far it is genuine. One is, that if it were possible for a man awake, to keep only one idea in his mind without variation, or the succession of others, he would have no perception of duration at all; and the moment he began to have this idea, would seem to have no distance from the moment he ceased to have it.

Now that one idea should seem to have no duration, and that a multiplication of that *no duration* should seem to have duration, appears to me as impossible, as that the multiplication of nothing should produce something.

Another conclusion which the author draws from this theory is, that the same period of duration appears long to us, when the succession of ideas in our mind is quick, and short when the succession is slow.

There can be no doubt but the same length of duration appears in some circumstances much longer than in others; the time appears long when a man is impatient under any pain or distress, or when he is eager in the expectation of some happiness: On the other hand, when he is pleased and happy in agreeable conversation, or delighted with a variety of agreeable objects that strike his senses, or his imagination, time flies away and appears short.

According to Mr LOCKE's theory, in the first of these cases, the succession of ideas is very quick, and in the last very slow: I am rather inclined to think that the very contrary is the truth. When a man is racked with pain, or with expectation, he can hardly think of any thing but his distress; and the more his mind is occupied by that sole object, the longer the time appears. On the other hand, when he is entertained with cheerful music, with lively conversation, and brisk sallies of wit, there seems to be the quickest succession of ideas, but the time appears shortest.

I have heard a military officer, a man of candour and observation, say, that the time he was engaged in hot action always appeared to him much shorter than it really was. Yet I think it cannot be supposed, that the succession of ideas was then slower than usual.

If the idea of duration were got merely by the succession of ideas in our minds, that succession must to ourselves appear equally quick at all times, because the only measure of duration is the number of succeeding ideas; but I believe every man capable of reflection will be sensible, that at one time his thoughts come slowly and heavily, and at another time have a much quicker and livelier motion.

I know of no ideas or notions that have a better claim to be accounted simple and original than those of space and time. It is essential both to space and time to be made up of parts, but every part is similar to the whole, and of the same nature. Different parts of space, as it has three dimensions, may differ both in figure and in magnitude; but time having only one dimension, its parts can differ only in magnitude; and, as it is one of the simplest objects of thought, the conception of it must be purely the effect of our constitution, and given us by some original power of the mind.

The sense of seeing, by itself, gives us the conception and belief of only two dimensions of extension, but the sense of touch discovers three; and reason, from the contemplation of finite extended things, leads us necessarily to the belief of an immensity that contains them. In like manner, memory gives us the conception and belief of finite intervals of duration. From the contemplation of these, reason leads us necessarily to the belief of an eternity, which comprehends all things that have a beginning and end. Our conceptions, both of space and time, are probably partial and inadequate, and therefore we are apt to lose ourselves, and to be embarrassed in our reasonings about them.

Our understanding is no less puzzled when we consider the minutest parts of time and space, than when we consider the whole. We are forced to acknowledge, that in their nature they are divisible without end or limit; but there are limits beyond which our faculties can divide neither the one nor the other.

It may be determined by experiment, what is the least angle under which an object may be discerned by the eye, and what is the least interval of duration that may be discerned by the ear. I believe these may be different in different persons: But surely there is a limit which no man can exceed: And what our faculties can no longer divide is still divisible in itself, and, by beings of superior perfection, may be divided into thousands of parts.

I have reason to believe, that a good eye in the prime of life may see an object under an angle not exceeding half a minute of a degree; and I believe there are some human eyes still more perfect. But even this degree of perfection will appear great, if we consider how small a part of the retina of the eye it must be which subtends an angle of half a minute.

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Supposing the distance between the centre of the eye and the retina to be six or seven tenths of an inch, the subtense of an angle of half a minute to that radius, or the breadth of the image of an object seen under that angle, will not be above the ten thousandth part of an inch. This shews such a wonderful degree of accuracy in the refracting power of a good eye, that a pencil of rays coming from one point of the object shall meet in one point of the retina, so as not to deviate from that point the ten thousandth part of an inch. It shews, likewise, that such a motion of an object as makes its image on the retina to move the ten thousandth part of an inch, is discernible by the mind.

In order to judge to what degree of accuracy we can measure short intervals of time, it may be observed, that one who has given attention to the motion of a second pendulum, will be able to beat seconds for a minute with a very small error. When he continues this exercise long, as for five or ten minutes, he is apt to err, more even than in proportion to the time, for this reason, as I apprehend, that it is difficult to attend long to the moments as they pass, without wandering after some other object of thought.

I have found, by some experiments, that a man may beat seconds for one minute, without erring above one second in the whole sixty; and I doubt not but by long practice he might do it still more accurately. From this, I think, it follows, that the sixtieth part of a second of time is discernible by the human mind.

CHAP. VI.

Of Mr LOCKE's *Account of our Personal Identity.*

IN a long chapter upon identity and diversity, Mr LOCKE has made many ingenious and just observations, and some which, I think, cannot be defended. I shall only take notice of the account he gives of our own personal identity. His doctrine upon this subject has been censured by Bishop BUTLER, in a short essay subjoined to his Analogy, with whose sentiments I perfectly agree.

Identity, as was observed chap. 4. of this Essay, supposes the continued existence of the being of which it is affirmed, and therefore can be applied only to things which have a continued existence. While any being continues to exist, it is the same being; but two beings which have a different beginning or a different ending of their existence, cannot possibly be the same. To this I think Mr LOCKE agrees.

He observes very justly, that to know what is meant by the same person, we must consider what the word *person* stands for; and he defines a person to be an intelligent being, endowed with reason and with consciousness, which last he thinks inseparable from thought.

From this definition of a person, it must necessarily follow, that while the intelligent being continues to exist and to be intelligent, it must be the same person. To say that the intelligent being is the person, and yet that the person ceases to exist, while the intelligent being continues, or that the person continues while the intelligent being ceases to exist, is to my apprehension a manifest contradiction.

One would think that the definition of a person hould perfectly ascertain the nature of personal ientity, or wherein it consists, though it might still be question how we come to know and be assured of ur personal identity.

Mr LOCKE tells us, however, " that personal identity, that is, the sameness of a rational being, consists in consciousness alone; and, as far as this consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person. So that whatever hath the consciousness of present and past actions, is the same person to whom they belong."

This doctrine hath some strange consequences, hich the author was aware of. Such as, that if the ame consciousness can be transferred from one inteligent being to another, which he thinks we cannot hew to be impossible, then two or twenty intelligent eings may be the same person. And if the inteligent being may lose the consciousness of the actions one by him, which surely is possible, then he is not he person that did those actions; so that one inteligent being may be two or twenty different persons, f he shall so often lose the consciousness of his former ctions.

There is another consequence of this doctrine, hich follows no less necessarily, though Mr LOCKE robably did not see it. It is, that a man may be, nd at the same not be the person that did a particular ction.

Suppose a brave officer to have been flogged when boy at school, for robbing an orchard, to have taken standard from the enemy in his first campaign, and o have been made a general in advanced life: Suppose also, which must be admitted to be possible, that when he took the standard, he was conscious of his having been flogged at school; and that when made a general, he was conscious of his taking the standard, but had absolutely lost the consciousness of his flogging.

These things being supposed, it follows, from Mr LOCKE's doctrine, that he who was flogged at school is the same person who took the standard; and that he who took the standard is the same person who was made a general. Whence it follows, if there be any truth in logic, that the general is the same person with him who was flogged at school. But the general's consciousness does not reach so far back as his flogging, therefore, according to Mr LOCKE's doctrine, he is not the person who was flogged. Therefore the general is, and at the same time is not the same person with him who was flogged at school.

Leaving the consequences of this doctrine to those who have leisure to trace them, we may observe, with regard to the doctrine itself,

First, That Mr LOCKE attributes to consciousness the conviction we have of our past actions, as if a man may now be conscious of what he did twenty years ago. It is impossible to understand the meaning of this, unless by consciousness be meant memory, the only faculty by which we have an immediate knowledge of our past actions.

Sometimes, in popular discourse, a man, says he, is conscious that he did such a thing, meaning that he distinctly remembers that he did it. It is unnecessary, in common discourse, to fix accurately the limits between consciousness and memory. This was formerly shewn to be the case with regard to sense and memory: And therefore distinct remembrance is sometimes called sense, sometimes consciousness, without any inconvenience.

But this ought to be avoided in philosophy, otherwise we confound the different powers of the mind, and ascribe to one what really belongs to another: If a man can be conscious of what he did twenty years, or twenty minutes ago, there is no use for memory, nor ought we to allow that there is any such faculty. The faculties of consciousness and memory are chiefly distinguished by this, that the first is an immediate knowledge of the present, the second an immediate knowledge of the past.

When, therefore, Mr LOCKE's notion of personal identity is properly expressed, it is, that personal identity consists in distinct remembrance: For, even in the popular sense, to say that I am conscious of a past action, means nothing else than that I distinctly remember that I did it.

Secondly, It may be observed, that, in this doctrine, not only is consciousness confounded with memory, but, which is still more strange, personal identity is confounded with the evidence which we have of our personal identity.

It is very true, that my remembrance that I did such a thing is the evidence I have that I am the identical person who did it. And this, I am apt to think, Mr LOCKE meant: But to say that my remembrance that I did such a thing, or my consciousness, makes me the person who did it, is, in my apprehension, an absurdity too gross to be entertained by any man who attends to the meaning of it: For it is to attribute to memory or consciousness, a strange magical power of producing its object, though that object must have existed before the memory or consciousness which produced it.

Consciousness is the testimony of one faculty; memory is the testimony of another faculty: And to say that the testimony is the cause of the thing testified, this surely is absurd, if any thing be, and could not have been said by Mr LOCKE, if he had not confounded the testimony with the thing testified.

When a horse that was stolen is found and claimed by the owner, the only evidence he can have, or that a judge or witnesses can have, that this is the very identical horse which was his property, is similitude. But would it not be ridiculous from this to infer that the identity of a horse consists in similitude only? The only evidence I have that I am the identical person who did such actions is, that I remember distinctly I did them; or, as Mr LOCKE expresses it, I am conscious I did them. To infer from this, that personal identity consists in consciousness, is an argument, which, if it had any force, would prove the identity of a stolen horse to consist solely in similitude.

Thirdly, Is it not strange that the sameness or identity of a person should consist in a thing which is continually changing, and is not any two minutes the same?

Our consciousness, our memory, and every operation of the mind, are still flowing like the water of a river, or like time itself. The consciousness I have this moment can no more be the same consciousness I had last moment, than this moment can be the last moment. Identity can only be affirmed of things which have a continued existence. Consciousness, and every kind of thought, is transient and momentary, and has no continued existence; and therefore, if personal identity consisted in consciousness, it would certainly follow, that no man is the same person any two moments of his life ; and as the right and justice of reward and punishment is founded on personal identity, no man could be responsible for his actions.

But though I take this to be the unavoidable consequence of Mr LOCKE's doctrine concerning personal identity, and though some persons may have liked the doctrine the better on this account, I am far from imputing any thing of this kind to Mr LOCKE. He was too good a man not to have rejected with abhorrence a doctrine which he believed to draw this consequence after it.

Fourthly, There are many expressions used by Mr LOCKE in speaking of personal identity, which to me are altogether unintelligible, unless we suppose that he confounded that sameness, or identity, which we ascribe to an individual, with the identity which in common discourse is often ascribed to many individuals of the same species.

When we say that pain and pleasure, consciousness and memory, are the same in all men, this sameness can only mean similarity, or sameness of kind ; but that the pain of one man can be the same individual pain with that of another man, is no less impossible, than that one man should be another man ; the pain felt by me yesterday, can no more be the pain I feel to-day, than yesterday can be this day ; and the same thing may be said of every passion and of every operation of the mind : The same kind or species of operation may be in different men, or in the same man at different times ; but it is impossible that the same individual operation should be in different men, or in the same man at different times.

When Mr LOCKE therefore speaks of "the same "consciousness being continued through a succession "of different substances;" when he speaks of "repeating the idea of a past action, with the same "consciousness we had of it at the first," and of "the same consciousness extending to actions past "and to come;" these expressions are to me unintelligible, unless he means, not the same individual consciousness, but a consciousness that is similar, or of the same kind.

If our personal identity consists in consciousness, as this consciousness cannot be the same individually any two moments, but only of the same kind, it would follow, that we are not for any two moments the same individual persons, but the same kind of persons.

As our consciousness sometimes ceases to exist, as in sound sleep, our personal identity must cease with it. Mr LOCKE allows, that the same thing cannot have two beginnings of existence, so that our identity would be irrecoverably gone every time we cease to think, if it was but for a moment.

CHAP. VII.

Theories concerning Memory.

THE common theory of ideas, that is, of images in the brain, or in the mind, of all the objects of thought, has been very generally applied to account for the faculties of memory and imagination, as well as that of perception by the senses.

The sentiments of the Peripatetics are expressed by ALEXANDER APHRODISIENSIS, one of the earliest Greek commentators on ARISTOTLE, in these words, as they are translated by Mr HARRIS in his Hermes, "Now "what fancy or imagination is, we may explain as "follows: We may conceive to be formed within us, "from the operations of our senses about sensible ob- "jects, some impression, as it were, or picture in our "original sensorium, being a relict of that motion "caused within us by the external object; a relict, "which, when the external object is no longer pre- "sent, remains, and is still preserved, being, as it "were, its image; and which, by being thus preserved, "becomes the cause of our having memory: Now "such a sort of relict, and as it were impression, they "call fancy or imagination."

Another passage from ALCINOUS *of the doctrines of* PLATO, chap. 4. shews the agreement of the ancient Platonists and Peripatetics in this theory, "When the "form or type of things is imprinted on the mind by "the organs of the senses, and so imprinted as not to "be deleted by time, but preserved firm and lasting, "its preservation is called *memory*."

Upon this principle ARISTOTLE imputes the shortness of memory in children to this cause, that their brain is too moist and soft to retain impressions made upon it: And the defect of memory in old men he imputes, on the contrary, to the hardness and rigidity of the brain, which hinders its receiving any durable impression.

This ancient theory of the cause of memory is defective in two respects: *First*, If the cause assigned did really exist, it by no means accounts for the phænomenon: And, *secondly*, There is no evidence, nor even probability, that that cause exists.

It is probable, that in perception some impression is made upon the brain as well as upon the organ and nerves, because all the nerves terminate in the brain, and because disorders and hurts of the brain are found to affect our powers of perception when the external organ and nerve are sound; but we are totally ignorant of the nature of this impression upon the brain: It can have no resemblance to the object perceived, nor does it in any degree account for that sensation and perception which are consequent upon it. These things have been argued in the second Essay, and shall now be taken for granted, to prevent repetition.

If the impression upon the brain be insufficient to account for the perception of objects that are present, it can as little account for the memory of those that are past.

So that if it were certain, that the impressions made on the brain in perception remain as long as there is any memory of the object; all that could be inferred from this is, that, by the laws of nature, there is a connection established between that impression, and the remembrance of that object. But how the impression contributes to this remembrance, we should be quite ignorant; it being impossible to discover how thought of any kind should be produced, by an impression on the brain, or upon any part of the body.

To say that this impression is memory, is absurd, if understood literally. If it is only meant that it is the cause of memory, it ought to be shewn how it produces this effect, otherwise memory remains as unaccountable as before.

If a philosopher should undertake to account for the force of gunpowder, in the discharge of a musket, and then tell us gravely, that the cause of this phænomenon is the drawing of the trigger, we should not be much wiser by this account. As little are we instructed in the cause of memory, by being told that it is caused by a certain impression on the brain. For supposing, that impression on the brain were as necessary to memory as the drawing of the trigger is to the discharge of the musket, we are still as ignorant as we were how memory is produced; so that, if the cause of memory, assigned by this theory, did really exist, it does not in any degree account for memory.

Another defect in this theory is, that there is no evidence, nor probability that the cause assigned does exist; that is, that the impression made upon the brain in perception remains after the object is removed.

That impression, whatever be its nature, is caused by the impression made by the object upon the organ of sense, and upon the nerve. Philosophers suppose, without any evidence, that when the object is removed, and the impression upon the organ and nerve ceases, the impression upon the brain continues, and is permanent; that is, that when the cause is removed the effect continues. The brain surely does not appear more fitted to retain an impression than the organ and nerve.

But granting that the impression upon the brain continues after its cause is removed, its effects ought to continue while it continues; that is, the sensation and perception should be as permanent as the impression upon the brain, which is supposed to be their cause. But here again the philosopher makes a second supposition, with as little evidence, but of a contrary nature, to wit, that, while the cause remains, the effect ceases.

If this should be granted also, a third must be made, That the same cause, which at first produced sensation and perception, does afterwards produce memory; an operation essentially different, both from sensation and perception.

A fourth supposition must be made, That this cause, though it be permanent, does not produce its effect at all times; it must be like an inscription which is sometimes covered with rubbish, and on other occasions made legible: For the memory of things is often interrupted for a long time, and circumstances bring to our recollection what had been long forgot. After all, many things are remembered which were never perceived by the senses, being no objects of sense, and therefore, which could make no impression upon the brain by means of the senses.

Thus, when philosophers have piled one supposition upon another, as the giants piled the mountains, in order to scale the heavens, all is to no purpose, memory remains unaccountable; and we know as little how we remember things past, as how we are conscious of the present.

But here, it is proper to observe, that although impressions upon the brain give no aid in accounting for memory, yet it is very probable, that, in the human frame, memory is dependent on some proper state or temperament of the brain.

Although the furniture of our memory bears no resemblance to any temperament of brain whatsoever, as indeed it is impossible it should; yet nature may have subjected us to this law, that a certain constitution or state of the brain is necessary to memory. That this is really the case, many well known facts lead us to conclude.

It is possible, that, by accurate observation, the proper means may be discovered of preserving that temperament of the brain which is favourable to memory, and of remedying the disorders of that temperament. This would be a very noble improvement of the medical art. But if it should ever be attained, it would give no aid to understand how one state of the brain assists memory, and another hurts it.

I know certainly, that the impression made upon my hand by the prick of a pin occasions acute pain. But can any philosopher shew how this cause produces the effect? The nature of the impression is here perfectly known; but it gives no help to understand how that impression affects the mind; and if we knew as distinctly that state of the brain which causes memory, we should still be as ignorant as before how that state contributes to memory. We might have been so constituted, for any thing that I know, that the prick of a pin in the hand, instead of causing pain, should cause remembrance; nor would that constitution be more unaccountable than the present.

The body and mind operate on each other, according to fixed laws of nature; and it is the business of a philosopher to discover those laws by observation and experiment: But, when he has discovered them, he must rest in them as facts, whose cause is inscrutable to the human understanding.

Mr LOCKE, and those who have followed him, speak with more reserve than the ancients, and only incidentally, of impressions on the brain as the cause of memory, and impute it rather to our retaining in our minds the ideas, got either by sensation or reflection.

This Mr LOCKE says, may be done two ways; "*First*, "By keeping the idea for some time actually in view, "which is called *contemplation*. *Secondly*, By the "power to revive again in our minds those ideas, "which, after imprinting, have disappeared, or have "been, as it were, laid out of sight; and this is me-"mory, which is, as it were, the store house of our "ideas."

To explain this more distinctly, he immediately

adds the following observation: "But our ideas being
"nothing but actual perceptions in the mind, which
"cease to be any thing, when there is no perception
"of them, this laying up of our ideas in the repository
"of the memory, signifies no more but this, that the
"mind has a power, in many cases, to revive percep-
"tions which it once had, with this additional percep-
"tion annexed to them, that it has had them before;
"and in this sense it is, that our ideas are said to be in
"our memories, when indeed they are actually no
"where; but only there is an ability in the mind,
"when it will, to revive them again, and, as it were
"paint them anew upon itself, though some with more,
"some with less difficulty, some more lively, and others
"more obscurely."

In this account of memory, the repeated use of the phrase, *as it were*, leads one to judge that it is partly figurative; we must therefore endeavour to distinguish the figurative part from the philosophical. The first being addressed to the imagination, exhibits a picture of memory, which, to have its effect, must be viewed at a proper distance, and from a particular point of view. The second being addressed to the understanding, ought to bear a near inspection, and a critical examination.

The analogy between memory and a repository, and between remembering and retaining, is obvious, and is to be found in all languages; it being very natural to express the operations of the mind by images taken from things material. But in philosophy we ought to draw aside the veil of imagery, and to view them naked.

When therefore memory is said to be a repository or storehouse of ideas, where they are laid up when not perceived, and again brought forth as there is occasion, I take this to be popular and rhetorical. For the author tells us, that when they are not perceived, they are nothing, and no where, and therefore can neither be laid up in a repository, nor drawn out of it.

But we are told, "That this laying up of our ideas "in the repository of the memory signifies no more "than this, that the mind has a power to revive per-"ceptions, which it once had, with this additional per-"ception annexed to them, that it has had them be-"fore." This, I think, must be understood literally and philosophically.

But it seems to me as difficult to revive things that have ceased to be any thing, as to lay them up in a repository, or to bring them out of it. When a thing is once annihilated, the same thing cannot be again produced, though another thing similar to it may.—Mr LOCKE, in another place, acknowledges, that the same thing cannot have two beginnings of existence; and that things that have different beginnings are not the same, but diverse. From this it follows, that an ability to revive our ideas or perceptions, after they have ceased to be, can signify no more but an ability to create new ideas or perceptions similar to those we had before.

They are said "to be revived, with this additional "perception, that we have had them before." This, surely, would be a fallacious perception, since they could not have two beginnings of existence; nor could we believe them to have two beginnings of existence. We can only believe, that we had formerly ideas or perceptions very like to them, though not identically the same. But whether we perceive them to be the same, or only like to those we had before, this perception, one would think, supposes a remembrance of those we had before, otherwise the similitude or indentity could not be perceived.

Another phrase is used to explain this reviving of our perceptions. "The mind, as it were, paints them anew upon itself." There may be something figurative in this; but making due allowance for that, it must imply, that the mind, which paints the things that have ceased to exist, must have the memory of what they were, since every painter must have a copy either before his eye, or in his imagination and memory.

These remarks upon Mr LOCKE's account of memory are intended to shew, that his system of ideas gives no light to this faculty, but rather tends to darken it; as little does it make us understand how we remember, and by that means have the certain knowledge of things past.

Every man knows what memory is, and has a distinct notion of it: But when Mr LOCKE speaks of a power to revive in the mind those ideas, which, after imprinting, have disappeared, or have been, as it were, laid out of sight, one would hardly know this to be memory, if he had not told us. There are other things which it seems to resemble at least as much. I see before me the picture of a friend. I shut my eyes, or turn them another way; and the picture disappears, or is, as it were, laid out of sight. I have a power to turn my eyes again towards the picture, and immediately the perception is revived. But is this memory? no surely; yet it answers the definition as well as memory itself can do.

We may observe, that the word *perception* is used by Mr LOCKE in too indefinite a way, as well as the word *idea*.

Perception, in the chapter upon that subject, is said to be the first faculty of the mind exercised about our ideas. Here we are told, that ideas are nothing but perceptions: Yet I apprehend it would sound oddly to say, that perception is the first faculty of the mind exercised about perception; and still more strangely to say, that ideas are the first faculty of the mind exercised about our ideas. But why should not ideas be a faculty as well as perception, if both are the same?

Memory is said to be a power to revive our perceptions. Will it not follow from this, that every thing that can be remembered is a perception? If this be so, it will be difficult to find any thing in nature but perceptions.

Our ideas, we are told, are nothing but actual perceptions; but in many places of the Essay, ideas are said to be the objects of perception, and that the mind, in all its thoughts and reasonings, has no other immediate object which it does or can contemplate but its own ideas. Does it not appear from this, either that Mr LOCKE held the operations of the mind to be the same thing with the objects of those operations, or that he used the word *idea* sometimes in one sense and sometimes in another, without any intimation, and probably without any apprehension of its ambiguity? It is an article of Mr HUME's philosophy, that there is no distinction between the operations of the mind and their objects. But I see no reason to impute this opinion to Mr LOCKE. I rather think, that, notwithstanding his great judgment and candour, his understanding was entangled by the ambiguity of the word *idea*, and that most of the imperfections of his Essay are owing to that cause.

Mr HUME saw farther into the consequences of the common system concerning ideas than any author had done before him. He saw the absurdity of making every object of thought double, and splitting it into a remote object, which has a separate and permanent existence, and an immediate object, called an idea or impression, which is an image of the former, and has no existence, but when we are conscious of it. According to this system, we have no intercourse with the external world, but by means of the internal world of ideas, which represents the other to the mind.

He saw it was necessary to reject one of these worlds as a fiction, and the question was, Which should be rejected? Whether all mankind, learned and unlearned, had feigned the existence of the external world without good reason? or whether philosophers had feigned the internal world of ideas, in order to account for the intercourse of the mind with the external? Mr Hume adopted the first of these opinions, and employed his reason and eloquence in support of it.

Bishop Berkeley had gone so far in the same track as to reject the material world as fictitious; but it was left to Mr Hume to complete the system.

According to his system, therefore, impressions and ideas in his own mind are the only things a man can know, or can conceive: Nor are these ideas representatives, as they were in the old system. There is nothing else in nature, or at least within the reach of our faculties, to be represented. What the vulgar call the perception of an external object, is nothing but a strong impression upon the mind. What we call the remembrance of a past event, is nothing but a present impression or idea, weaker than the former. And what we call imagination, is still a present idea, but weaker than that of memory.

That I may not do him injustice, these are his words in his Treatise of Human Nature, page 193.

"We find by experience, that when any impression "has been present with the mind, it again makes its "appearance there as an idea; and this it may do "after two different ways, either when in its new appearance it retains a considerable degree of its first "vivacity, and is somewhat intermediate betwixt an "impression and an idea, or when it entirely loses that "vivacity, and is a perfect idea. The faculty by "which we repeat our impressions in the first manner, "is called the memory, and the other the imagination."

Upon this account of memory and imagination I shall make some remarks.

First, I wish to know, what we are here to understand by experience? It is said, we find all this by experience; and I conceive nothing can be meant by this experience but memory. Not that memory which our author defines, but memory in the common acceptation of the word. According to vulgar apprehension, memory is an immediate knowledge of something past. Our author does not admit that there is any such knowledge in the human mind. He maintains that memory is nothing but a present idea or impression. But, in defining what he takes memory to be, he takes for granted that kind of memory which he rejects. For can we find by experience, that an impression, after its first appearance to the mind, makes a second, and a third, with different degrees of strength and vivacity, if we have not so distinct a remembrance of its first appearance, as enables us to know it, upon its second and third, notwithstanding that, in the interval, it has undergone a very considerable change?

All experience supposes memory; and there can be no such thing as experience, without trusting to our own memory, or that of others: So that it appears from Mr HUME's account of this matter, that he found himself to have that kind of memory, which he acknowledges and defines, by exercising that kind which he rejects.

Secondly, What is it we find by experience or memory? It is, "That when an impression has been "present with the mind, it again makes its appearance "there as an idea, and that after two different ways."

If experience informs us of this, it certainly deceives us; for the thing is impossible, and the author shews it to be so. Impressions and ideas are fleeting perishable things, which have no existence, but when we are conscious of them. If an impression could make a second and a third appearance to the mind, it must have a continued existence during the interval of these appearances, which Mr HUME acknowledges to be a gross absurdity. It seems then, that we find by experience, a thing which is impossible. We are imposed upon by our experience, and made to believe contradictions.

Perhaps it may be said, that these different appearances of the impression are not to be understood literally, but figuratively; that the impression is personified, and made to appear at different times, and in different habits, when no more is meant, but that an impression appears at one time; afterwards a thing of a middle nature, between an impression and an idea, which we call memory; and last of all a perfect idea, which we call imagination: that this figurative meaning agrees best with the last sentence of the period, where we are told, 'that memory and imagination are faculties, whereby we repeat our impressions in a more or less lively manner. To repeat an impression is a figurative way of speaking, which signifies making a new impression similar to the former.

If, to avoid the absurdity implied in the literal meaning, we understand the philosopher in this figurative one, then his definitions of memory and imagination, when stripped of the figurative dress, will amount to this, That memory is the faculty of making a weak impression, and imagination the faculty of making an impression still weaker, after a corresponding strong one. These definitions of memory and imagination labour under two defects; *first*, That they convey no notion of the thing defined; and, *secondly*, That they may be applied to things of a quite different nature from those that are defined.

When we are said to have a faculty of making a weak impression after a corresponding strong one, it would not be easy to conjecture that this faculty is memory. Suppose a man strikes his head smartly against the wall, this is an impression; now he has a faculty by which he can repeat this impression with less force, so as not to hurt him; this, by Mr HUME's account, must be memory. He has a faculty by which he can just touch the wall with his head, so that the impression entirely loses its vivacity. This surely must be imagination; at least it comes as near to the definition given of it by Mr HUME as any thing I can conceive.

Thirdly, We may observe that when we are told that we have a faculty of repeating our impressions in a more or less lively manner, this implies that we are the efficient causes of our ideas of memory and imagination; but this contradicts what the author says a little before, where he proves, by what he calls a convincing argument, that impressions are the cause of their corresponding ideas. The argument that proves this, had need indeed to be very convincing; whether we make the idea to be a second appearance of the impression, or a new impression similar to the former. If the first be true, then the impression is the cause of itself. If the second, then the impression, after it is gone, and has no existence, produces the idea. Such are the mysteries of Mr HUME's philosophy.

It may be observed, that the common system, that ideas are the only immediate objects of thought, leads to scepticism with regard to memory, as well as with regard to the objects of sense, whether those ideas are placed in the mind or in the brain.

Ideas are said to be things internal and present, which have no existence but during the moment they are in the mind. The objects of sense are things external, which have a continued existence. When it is maintained, that all that we immediately perceive is only ideas or phantasms, how can we from the existence of those phantasms, conclude the existence of an external world corresponding to them?

This difficult question seems not to have occurred to the Peripatetics. DES CARTES saw the difficulty, and endeavoured to find out arguments by which, from the existence of our phantasms or ideas, we might infer the existence of external objects. The same course was followed by MALEBRANCHE, ARNAULD, and LOCKE; but BERKELEY and HUME easily refuted all their arguments, and demonstrated that there is no strength in them.

The same difficulty with regard to memory naturally arises from the system of ideas; and the only reason why it was not observed by philosophers, is, because they give less attention to the memory than to the senses: For since ideas are things present, how can we, from our having a certain idea presently in our mind, conclude that an event really happened ten or twenty years ago corresponding to it?

There is the same need of arguments to prove, that the ideas of memory are pictures of things that really did happen, as that the ideas of sense are pictures of external objects which now exist. In both cases, it will be impossible to find any argument that has real weight. So that this hypothesis leads us to absolute scepticism, with regard to those things which we most distinctly remember, no less than with regard to the external objects of sense.

It does not appear to have occurred either to LOCKE or to BERKELEY, that their system has the same tendency to overturn the testimony of memory as the testimony of the senses.

Mr HUME saw farther than both, and found this consequence of the system of ideas perfectly corresponding to his aim of establishing universal scepticism. His system is therefore more consistent than theirs, and the conclusions agree better with the premises.

But if we should grant to Mr HUME, that our ideas of memory afford no just ground to believe the past existence of things which we remember, it may still be asked, How it comes to pass that perception and memory are accompanied with belief, while bare imagination is not? Though this belief cannot be justified upon his system, it ought to be accounted for as a phænomenon of human nature.

This he has done, by giving us a new theory of belief in general; a theory which suits very well with that of ideas, and seems to be a natural consequence of it, and which at the same time reconciles all the belief that we find in human nature to perfect scepticism.

What then is this belief? It must either be an idea, or some modification of an idea; we conceive many things which we do not believe. The idea of an object is the same whether we believe it to exist, or barely conceive it. The belief adds no new idea to the conception; it is therefore nothing but a modification of the idea of the thing believed, or a different manner of conceiving it. Hear himself:

“All the perceptions of the mind are of two kinds, impressions and ideas, which differ from each other only in their different degrees of force and vivacity. Our ideas are copied from our impressions, and represent them in all their parts. When you would vary the idea of a particular object, you can only increase or diminish its force and vivacity: If you make any other change upon it, it represents a different object or impression. The case is the same as in colours. A particular shade of any colour may acquire a new degree of liveliness or brightness, without any other variation; but when you produce any other variation, it is no longer the same shade or colour. So that as belief does nothing but vary the manner in which we conceive any object, it can only bestow on our ideas an additional force and vivacity. An opinion, therefore, or belief, may be most accurately defined a lively idea, related to, or associated with a present impression.”

This theory of belief is very fruitful of consequences, which Mr HUME traces with his usual acuteness, and brings into the service of his system. A great part of his system indeed is built upon it; and it is of itself sufficient to prove what he calls his hypothesis, “that belief is more properly an act of the sensitive than of the cogitative part of our natures.”

It is very difficult to examine this account of belief with the same gravity with which it is proposed. It puts one in mind of the ingenious account given by MARTINUS SCRIBLERUS of the power of syllogism, by making the *major* the male, and the *minor* the female, which being coupled by the middle *term*, generate the conclusion. There is surely no science in which men of great parts and ingenuity have fallen into such gross absurdities as in treating of the powers of the mind. I cannot help thinking, that never any thing more absurd was gravely maintained by any philosopher, than this account of the nature of belief, and of the distinction of perception, memory, and imagination.

The belief of a proposition is an operation of mind of which every man is conscious, and what it is, he understands perfectly, though, on account of its simplicity, he cannot give a logical definition of it. If he compares it with strength or vivacity of his ideas, or with any modification of ideas, they are so far from appearing to be one and the same, that they have not the least similitude.

That a strong belief and a weak belief differ only in degree, I can easily comprehend; but that belief and no belief should differ only in degree, no man can believe who understands what he speaks: For this is in reality to say that something and nothing differ only in degree, or that nothing is a degree of something.

Every proposition that may be the object of belief, has a contrary proposition that may be the object of a contrary belief. The ideas of both, according to Mr HUME, are the same, and differ only in degrees of vivacity. That is, contraries differ only in degree; and so pleasure may be a degree of pain, and hatred a degree of love. But it is to no purpose to trace the absurdities that follow from this doctrine, for none of them can be more absurd than the doctrine itself.

Every man knows perfectly what it is to see an object with his eyes, what it is to remember a past event, and what it is to conceive a thing which has no existence. That these are quite different operations of his mind, he is as certain as that sound differs from colour, and both from taste; and I can as easily believe that sound, and colour, and taste, differ only in degree, as that seeing, and remembering, and imagining, differ only in degree.

Mr HUME, in the third volume of his Treatise of Human Nature, is sensible that his theory of belief is liable to strong objections, and seems, in some measure, to retract it; but in what measure it is not easy to say. He seems still to think, that belief is only a modification of the idea, but that vivacity is not a proper term to express that modification. Instead of it he uses some analogical phrases to explain that modification, such as "apprehending the idea more "strongly, or taking faster hold of it."

There is nothing more meritorious in a philosopher than to retract an error upon conviction; but in this instance I humbly apprehend Mr HUME claims that merit upon too slight a ground: For I cannot perceive that the apprehending an idea more strongly, or taking faster hold of it, expresses any other modification of the idea than what was before expressed by its strength and vivacity, or even that it expresses the same modification more properly. Whatever modification of the idea he makes belief to be, whether its vivacity, or some other without a name, to make perception, memory, and imagination, to be the different degrees of that modification, is chargeable with the absurdities we have mentioned.

Before we leave this subject of memory, it is proper to take notice of a distinction which ARISTOTLE makes between memory and reminiscence, because the distinction has a real foundation in nature, though in our language, I think, we do not distinguish them by different names.

Memory is a kind of habit which is not always in exercise with regard to things we remember, but is ready to suggest them when there is occasion. The most perfect degree of this habit is, when the thing presents itself to our remembrance spontaneously, and without labour, as often as there is occasion. A second degree is, when the thing is forgot for a longer or shorter time, even when there is occasion to remember it, yet at last some incident brings it to mind without any search. A third degree is, when we cast about and search for what we would remember, and so at last find it out. It is this last, I think, which ARISTOTLE calls reminiscence, as distinguished from memory.

Reminiscence, therefore, includes a will to recollect something past, and a search for it. But here a difficulty occurs. It may be said, that what we will to remember we must conceive, as there can be no will without a conception of the thing willed. A will to remember a thing, therefore, seems to imply that we remember it already, and have no occasion to search for it. But this difficulty is easily removed. When we will to remember a thing, we must remember something relating to it, which gives us a relative conception of it; but we may, at the same time, have no conception what the thing is, but only what relation it bears to something else. Thus, I remember that a friend charged me with a comission to be executed at such a place; but I have forg what the commission was. By applying my thought to what I remember concerning it, that it was given by such a person, upon such an occasion, in consequence of such a conversation, I am led, in a train of thought, to the very thing I had forgot, and recollect distinctly what the commission was.

Aristotle says, that brutes have not reminiscence, and this I think is probable; but, says he, they have memory. It cannot, indeed, be doubted but they have something very like to it, and in some instances in a very great degree. A dog knows his master after long absence. A horse will trace back a road he has once gone as accurately as a man; and this is the more strange, that the train of thought which he had in going, must be reversed in his return. It is very like to some prodigious memories we read of, where a person, upon hearing an hundred names, or unconnected words pronounced, can begin at the last, and go backwards to the first, without losing or misplacing one. Brutes certainly may learn much from experience, which seems to imply memory.

Yet I see no reason to think that brutes measure time as men do, by days, months, or years, or that they have any distinct knowledge of the interval between things which they remember, or of their distance from the present moment. If we could not record transactions according to their dates, human memory would be something very different from what it is, and perhaps resemble more the memory of brutes.

END OF VOLUME FIRST.